

TANDY LAPTOP COMPUTING

MARCH 1992 -VOL. 9, NO. 3

TERRY KEPNER'S

portable 100

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A MONTHLY PUBLICATION (EXCEPT COMBINED JULY/AUGUST ISSUE)

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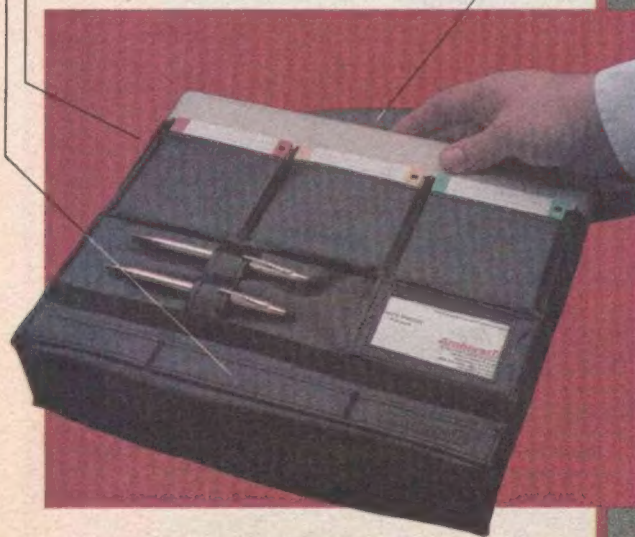


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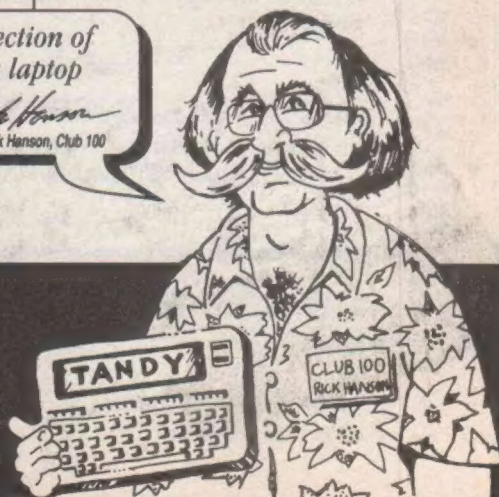
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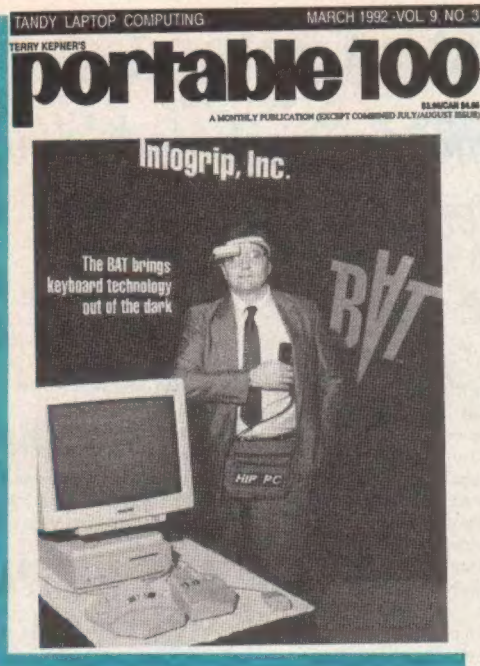
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Circle 165 on reader service card.



ON THE COVER:

Doug Platt poses with the "wearable computer" and a "Private Eye" individual video display headset. In the foreground, is the INFOGRIP BAT, full sized alternative keypad featured on page 27, and he is holding an INFOGRIP MINI-BAT, about which we've written in the past. Can you tell we are excited about the INFOGRIP product line? Ward Bond, affectionately known as "The BATman" will enthusiastically discuss his products with you. Give him a call.



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- ✓ MS-DOS
✓ M-102
✓ WP-2 by Russ Hall
Use this utility to print small, customized schedule books.

13 SOFTWARE BRIDGE

- ✓ MS-DOS
✓ M-102
✓ WP-2 by Terry Kepner
Software Bridge will span the chasm between your files and other kinds of software.

16 TROUBLESHOOTING: PART I

- ✓ MS-DOS
✓ M-102
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This town's not big enough for you and a malfunctioning computer, pahdna.

18 WEETAX UPGRADE

- ✓ MS-DOS
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24 DRAW, PARDNER!

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Corral Deskmate Draw: simple, easy and fun.

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✓ M-102
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Become more competitive in the information age.

36 BETTER LETTERHEADS, PART TWO

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Use Super ROM to customize your letterheads.

41 PHONE HOME: THE WP-2 PHONE BOOK

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Let your WP-2 do the dialing-without leaving your application.

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I/O

PORTABLE 100 CLASSIFIEDS

ADVERTISERS' INDEX

Private Eye and if the creek don't rise

A meeting of the minds

Software, hardware, wanted.

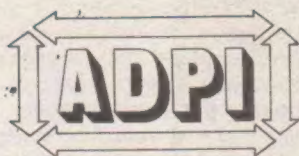
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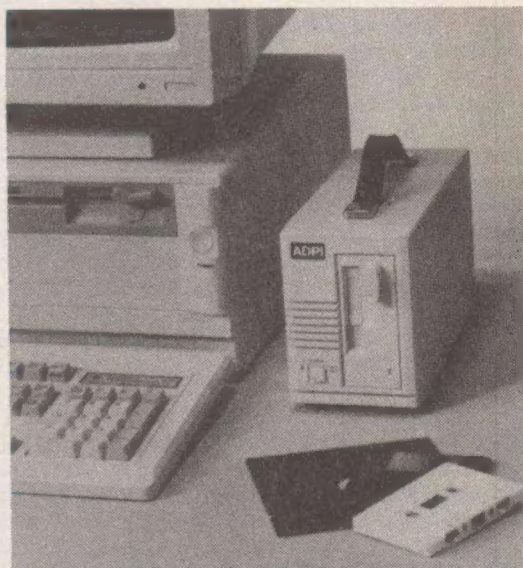
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ROM WITH A VIEW

Man, I thought this issue would take forever to finish and get to the printer, but we finally made it (this column is always the last thing written — naturally, 'cause I'm too busy with everything else to think about it until then). Anyway, we seem to have slipped off schedule the last two months. Sigh. Now to get back on schedule by doing twice the work in half the time!

I'm sure you have noticed the new advertisers we've added to the magazine the last few months, especially ADPI and Automap. All these new people mean our effort to broaden our advertising base is succeeding. The payoff to you, the reader, is that with this stable and growing base we can start planning and executing our growth plans, including newsstand distribution and thicker magazines. It'll take a couple of months for this show up, so bear with us a while.

This month's cover is a bit of a departure for us. We got wind of this interesting new development in technology just a day or so ago and wanted to share it with you. The only problem is we aren't sure when the photo will arrive. If it doesn't, well, then, um . . . , well, our cover page is rather, um, blank. Oops.

On the other hand, God willing and the creek don't rise, the cover picture is of a wearable computer, in use. The model has a fanny-pack sized IBM 80286 computer with 20MB hard disk drive (that's that thing labeled "Hip PC"). The small oblong thing on his glasses, above his right eye, is the Private Eye. The Private Eye is an EGA resolution monochrome graphic display that appears to your eye as a twelve-inch monitor. That's right, it looks like a twelve-inch monitor floating about eighteen inches away from in, just hanging there is space.

I've seen and used the Private Eye — a prototype on demonstration at Comdex two years ago — and the graphics are stunning. The printing, standard IBM 80x25, is perfectly legible, better even than many expensive monitors.

That takes care of the computer and display, now for the keyboard. Remember the review in the November 1991 Portable 100 about the MiniBAT Agenda? Well, that's the keyboard. The model in the picture, Doug Platt, has it velcro mounted to a pair of suspenders. He says he feels like Napoleon using it, but the keyboard is easy to access, protected, and very unobtrusive.

How's that for portable computing!

On Doug's right is the BAT, a one handed keyboard system you can hook up either through your RS-232 port or the parallel port for applications requiring inputting information with one hand while doing something else with the other (CAD/CAM, for example). You can find more on the BAT in the review in this issue.

You'll notice that the I/O section is larger than usual this month, and that DEFUSR is back after a several month hiatus. The letters have been piling up, so we decided to do a quick catch-up on the more interesting stuff. We might have the an expanded I/O and DEFUSR next month, too. We haven't decided yet.

We're still asking for article submissions. If you want to submit something, make sure it is double-spaced, with standard one-inch margins. If there is a listing for it, the listing must be included on disk (IBM 3.5-inch or 5.25-inch, or Tandy 3.5-inch Portable Disk Drive disk). We simply do not have the time to type in and verify the listings here. If you have a review, don't forget to provide all the details on who makes it, what it requires, and how much it costs (check our Product Specifications and Suppliers boxes for examples).

Well, things are looking up here. Hope things are going well for all of you, too. Bye.

Terry Kepner

Toolbox

Manuscripts were typed into Microsoft Word 4.0 on a Tandy 1500 HD, where they were edited, spell-checked, and had basic format instructions inserted. From there they were loaded into a Tandy 4000 (80386 CPU, Tandy EGA Monitor, Tandy LP-1000 LaserPrinter) desktop computer and placed into Aldus' IBM PageMaker 3.01. Once there, design decisions on photo, figure, and listing sizes and placements were made. Here, pull quotes are placed, headlines, intros, and bylines are sized and positioned, and advertisements positioned.

Normally, the Tandy LP-1000 is capable of emulating only a Hewlett Packard Laser Printer Plus, but with the

addition of the Destiny Technology Corporation (300 Montague Expressway, Suite 150, Milpitas, CA 95035, (408) 262-9400) PageStyler 4.5MB kit, the LP-1000 is turned into a fully-compatible PostScript printer, with all 35 native fonts that are found in the Apple LaserWriter Plus printer. The Destiny PageStyler is available through the Tandy Express Order Hardware system.

Page previews were output from the Laserprinter. When everyone was satisfied with the appearance, final pages were output and artwork and line art ads were positioned. The finished magazine was then delivered to the printer, who printed it, labeled it, and mailed it to you.

portable 100

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The four best programs for the Model 100 all on one ROM. 32K of power without using any RAM for program storage. This is the PCSG Snap-In ROM that just presses easily into the little ROM socket in the compartment on the back. You access the four right from the main menu like built-ins.

Write ROM — the definitive word processor for the Model 100. Function key formatting or dot commands. Search and replace. Library feature — inserts words, phrases or whole documents into text from just a code. MAP lets you see a picture of your document. In all there are 60 features and functions. No one can claim faster operation. FORM lets you create interactive forms with on-screen prompts that you can answer from the keyboard. Nothing else for the Model 100 compares with the features of Write ROM. Exactly the same as the Write ROM sold as a single program. Infoworld says it "makes the Model 100 a viable writing unit... sur-

passed our highest expectations for quality and clarity."

Lucid Spreadsheet: This is the one PICO magazine says "blows Multiplan right out of the socket" and Infoworld performance rated as "excellent" and said "makes the Model 100 compute." Gives you features you cannot get with Lotus 123. Lets you build spreadsheets in your Model 100 that would consume 140-150K on a desktop. Program generating capability with no programming knowledge required. Variable column widths. Includes find and sort with function key control. It's fast, recalculates like lightning. No feature has been taken from the original, only new ones added.

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Outliner: Does everything that Think-tank does on a PC but a whole lot better. Includes a Sort for your headlines. Lets you have headlines of up to 240 characters. Has cloning, hoisting and sideways scroll up to 250 characters. Like Lucid, this one sets a new standard for outliners. This is the way to plan and organize your projects.

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As usual PCSG sells the Super ROM on a thirty day guarantee. If for any reason you are not satisfied, simply return it for a full refund.

We are excited about this product. Super ROM gives the Model 100 the true power of a desktop. No other multi-program ROM has software that compares. But don't take our word for it. We invite you to make that comparison yourself. Priced at \$199.95 on Snap-In ROM.

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Meeting of Minds

I feel I have found the perfect desktop companion for my Model 100. Like the Model T, it is also in the lower end of its market, making it a very affordable companion. It's a Commodore 64!

I use this so-called game machine with a one-megabyte RAM Expansion Unit (REU) and inexpensive software called GEOS (Graphical Environment Operating System), which makes the C-64 as easy and fun to use as an Apple Macintosh. It also allows me to do desktop publishing.

I trade files between my two computers by using an Omnitronix RS-232 interface and a null modem adapter from Radio Shack. I connect the RS-232 port on the Model T to the user port on the C-64, using the Omnitronix cable, with the null modem adapter connected between the Model T's RS-232 port and the Omnitronix cable. I enter TELCOM on the Model T, press *Stat* (F3) and set the parameters at 38N1E, 10pps. Press *Term* (F4), then press F3 for upload. Enter the file name, then press ENTER; TELCOM will ask you for the width. I usually enter 80, but before pressing ENTER, I make sure that the terminal program on the C-64 is set at 300 baud, full duplex, and that the buffer is set on open. I press ENTER on the Tandy, and the file is poured into the buffer in *geoTerm*. When the buffer is full, I save the contents as a true ASCII file, then use a GEOS conversion program to convert it into *geoWrite*, and then use that text for desktop publishing.

I am now being paid to do a newsletter for the office building where I work (see Figure 1). I enter the text into my Tandy at work, upload it to my C-64, where I add fonts, typeset, design and graphics. I am very pleased with the results and am now typesetting a book using files I created on the Model T.

I know of a psychologist who uses both machines in his business. I'm sure I'm only one of many who have discovered what an inexpensive, fantastic combination these two machines can be, not only for fun but for business. I want to let other Model T users know that there are inexpensive alternatives for a desktop mate for their Model T's.

Charles M. Sprague
San Francisco, CA

Thanks for writing. As many people have discovered, the Model T makes a perfect

companion to everything! And that just because a machine is old technology, doesn't mean it isn't any good anymore. The Commodore 64, the Apple II, the TRS-80 Model 1, and many other "outdated" machines are just as useful today as they were when they premiered. You do not need the latest greatest computer for most tasks. The only time a machine becomes obsolete is when it is no longer capable of doing what you need done. And just because you find it obsolete doesn't mean that it isn't perfect for someone else's needs.

-tk

I am typesetting a book using files I created on the Model T.

A NEW READER

I'm a newcomer to *Portable 100* and the Tandy 102. I find it an exciting excursion away from day to day "productivity" computing on DOS machines...kind of a hobby more than work. I received your June copy of *Portable 100* and subscribed for two years.

It's funny, I'm looking forward more to *Portable 100* than to my "regulars" such as *PC Magazine*, *Byte*, etc. I'm on your bandwagon.

By the way, I'm a full-time teacher at our local Community College here in Hilo. I'm always looking for new classroom ideas and like everyone else we use DOS and MAC machines in instruction. Introducing something like *BASIC* on a Tandy might prove interesting.

The Montgomery Building Gazette 601 Montgomery Street

Volume I, Number IV

July/August 1991



Limited Office Space Available

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July 26th,

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August 2nd,

CIVILIANS

Performs acoustic rock tunes that draw on diverse sources from Springsteen to Chick Corea.

Figure 1. Mr. Sprague puts together this newsletter using his Model 100 for the text input.

Is there a source for this kind of information that I can check out? Thanks for your time and attention.

Joel C. Peralto
Hilo, Hawaii

Welcome aboard! Exactly what kind of information did you want? Were you thinking of programming instructions for neophyte programmers? Or were you referring to books on programming? As for books, just about anything on GW-BASIC will do the job. The only differences between GW-BASIC and Model 100 BASIC are the graphics (obviously, the Model 100 doesn't have CGA graphics) and screen positioning (the Model 100 uses PRINT@ to position the cursor while the GW-BASIC uses LOCATE ROW,COLUMN).

TRAVELING 100

You've probably got travel photos coming out of your ears, but here's one for your collection. I spent three terrific weeks on a lone-ranger trip to Korea in October and November. I could not go without my M-102 (with booster pack, UR-2, Sardine, Multiplan, CRDFIL, and PDD-1). What a faithful, entertaining companion! It went with me on the 14-hour flight to and from NYC/Seoul, then by train, bus, subway, boat, bicycle, and hikes throughout the country.

The enclosed photo shows me cross-legged, shoe-less in a Kyungju yongbon,

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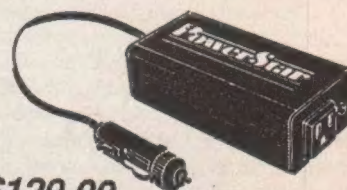


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Circle 99 on reader service card.



Photo 1. Dr. Lowe, showing off his Model 102 while in Korea.

a native Korean room about 6 by 8 feet where I slept a few nights on the heated floor. Koreans love sleeping on hard surfaces and can even use a brick for a pillow. They say if you're having back problems you should sleep on hard surfaces. It took me a while to get used to it. Fortunately, I had my handy Tandy along to make daily journal entries, to write letters and articles, and to keep track of daily expenses.

Thanks for the fine articles each month. I always enjoy them even if they don't all apply to me and my trusty

Model T.

While in Korea I purchased a model RC-106 4-pack NiCd battery charger that handles variable voltages from 85V to 220V outlets which are quite common in Korean homes and hotels.

**Dr. James Lewis
Lowe
Norwood, Pa.**

Actually, Dr. Lowe, we don't get all that many travelers' photos. Thanks for sending us yours.

-tk

NERVYREADERS

The CompuServe mail message by David O. Rowell and the reply by tk on page 6 of the January 1992 issue of *Portable 100* must touch a nerve with many people like myself, whose computer skills were developed on the very user-friendly Model 100.

My programs are now beginning to outgrow any RAM expansion that is compatible with the Model 100, and I have bought an XT-compatible with a Disk+ and an IBM version of the *Lucid*

spreadsheet to move over into the bigger environment. Soon I hope to buy a *Telecommuter* to make the XT do more of the things my Model 100 is doing for me now, but eventually I must learn either MS-DOS or DR-DOS to get the full benefit of my new computer.

However, my early forays into the IBM environment have taught me that going from the Model 100 to the MS-DOS is like going from the local swimming pool for a swim in a crocodile tank. MS-DOS is not very friendly to us Model 100 types.

We need to be taught all the pitfalls and new words of our new world, but can we turn to our home environment for instruction? Has anybody written any program that will run on the Model 100 that will give instruction in MS-DOS?

**Michael P. Hermansen
Breton, AB, TOC OPO**

ANOTHERWP-2FAN

A copy of *Portable 100* appeared in my mail recently and I was pleased to have the chance to renew my subscription which had lapsed when I switched from my old T100 to a desktop IBM clone. In the meantime, I acquired a WP-2 and your magazine is, as far as I know, the only source of information on the WP-2

and utilities available for it. I like the WP-2 in spite of the small screen and limited capabilities (trying to interpose text in a document is a tedious business). The WP-2 is light and compact and easy to take along on trips and hide from sticky fingers in hotel rooms, and the battery capacity is a lot better than that of other laptops I am familiar with. My problem with the WP-2 is the small amount of memory that is available, even after adding two expensive memory cards. Since I have two of the Radio Shack 100K portable disk drives, I am writing to ask if you can tell whether it is possible to use them with the WP-2. Also, have you any plans for an article on the WP-2 (or have I missed one in an earlier issue) that would discuss transferring files to a desktop machine? According to the manual, it should be easy, but I haven't been successful so far.

Bruce Mackay, M.D., Ph.D.
MD Anderson Cancer Center
Houston, TX

Unfortunately, the Tandy 100K disk drive does not work well with the WP-2. Your only option there is to sell the two 100K jobbies and buy a 200K unit.

As for articles on transferring files to and from a desktop, we've covered that issue several times. We even have a small booklet on the WP-2, for \$9.95, that also covers that topic. For more information on the articles we have about the WP-2, at least a dozen, I suggest you get our article index. It only costs \$9, and it covers all our issues from September 1983 to July/August 1991.

-tk

RENEWED HOPE!

I recently received my first issue (January 1992) of *Portable 100*. Your magazine is a nifty publication: I had just about given up hope that there was much support for my Tandy 102.

I am particularly interested in a spreadsheet for my 102, that has a decent number of columns and rows, a comprehensive set of math and logic functions, save and load of templates, and printing ability. I am also interested, apart from the spreadsheet, in expanding RAM to at least double the stock "32K". I have enclosed a card with, hopefully, the correct numbers circled for information on possibilities.

I use my 102 for ham radio control, estimated MUF calculation, and storage of files on contacts.

The program *MINE.BA* in the January issue is a fun program. I had a couple of problems getting it to run, and offer these suggestions:

Lines 140 and 150 - eliminate (My 102 seemed forever lost in a loop trying to get

X=MX and Y=MY.)

Line 260 - the grid 789 4+6 123 was upside down (correction is easy.)

I offer the following short program which I regularly use to set *TELCOM* parameters for communication via RS-232 with my MFJ-1278 (a ham radio device) and my Portable Disk Drive 2:

```
10 PRINT 0, "SETCOM.BA: This is
program sets TELCOM parameters and
returns to menu."
20 PRINT 80, "Choose which you
want to comm with:"
31 PRINT 125, "1. MFJ-1278
."
32 PRINT 165, "2. Disk drive."
40 INPUT "NUMBER OF YOUR CHOICE: "; N
51 IF N=1 THEN OPEN "COM:58N1E" FOR INPUT AS 1: CLOSE
1
52 IF N=2 THEN OPEN "COM: 98N1D" FOR INPUT AS 1: CLOSE
1
60 MENU
```

Frank A. Allard
Twin Falls, ID

Who has the energy to tote a 15-pounder to interview after interview?

PSSSSST! A LITTLE TIP.

What you're running now in *Portable 100* is the stuff that makes journalists like me whoop with joy when my latest edition arrives. (And there aren't many things that make reporters, editors and their ilk go into great spasms of joyful whooping.) It's readable. A lot of it is in plain English. And there's enough elementary stuff to bridge the gap between amateur and user without requiring a degree in electronics or a brain like Einstein's.

Journalists almost always are on a fast track, with a great need for something simple, dependable and transportable—a good definition for the Model 100

family. (I mean, who has the energy to tote around a 15-pounder to interview after interview or try to figure out the fundamentals of a 286 laptop from a hotel room in, say, France or Pinpoint, GA. when there's a deadline staring you in the face?)

And yet we need to go beyond the basics of typing in notes—you've also heard of story writing, editing, transmitting to mainframe computers across long distance telephone lines or sending to our own PCs that we use at home or at work. You get the idea.

My suggestion: Send a sample copy of *Portable 100*—the November issue is a perfect example—to some of the better journalism schools around the country with a note that tells them these sturdy little notebook computers and their compact add-ons still are available either new or used. Send stuff that can be posted on bulletin boards with *P100*'s name, address, phone number, etc. (Sorry folks, the local libraries don't know you.)

Send same to the top computer whizzes at some of the more prolific newsrooms where the electronics people get weary of listening to bitches and gripes about how to process stories from remote locations. (One newsroom had standing room only when it recently auctioned off its stable of "antiquated" 100s. Everyone hated the hi-tech replacements.)

But don't send more than one *P100* issue to those professionals. Journalist are notorious for passing around material until it's dogeared and they'll never subscribe if they can get something for free. Again, you get the idea.

Could be a good lead. And tell 'em "Deep Throat" sent you.

CHEERS!

DT

MODEL 100'S TO THE RESCUE!

I have a story idea you may or may not have thought of. One of my friends, Mark Lovewell, is a photographer/reporter for the *Vineyard Gazette*, Edgartown, Martha's Vineyard. He uses his 102 in his work. As you know Hurricane Bob hit Edgartown Harbor dead center. The street where the newspaper office is located is in one of the hardest hit areas of town. I quote now from the August 21, 1991, edition of the *Vineyard Gazette* which Mark has just mailed me.

"On Tuesday morning there was no power on the Vineyard and Cape Cod and it looked like Edgartown might be the last island town to have power restored . . .

"Arrangements were made to fly to Nantucket early Tuesday afternoon,

Portable 100 BACK ISSUES

With over 60 issues, and hundreds of articles, *Portable 100* is THE source for information, programs, and applications for your Tandy Portable Computer. But how do you find what you need among all those issues? The answer is the **updated Portable 100 Article Index**. Covering every issue from September 1983 to the combined summer 1989 issue, the index is designed to make it simple for you to find what you need. And at a cost of only \$9.00 (postage and handling included), you should buy one today! If you have last year's index, don't despair. Update your index by adding our special 1988-1989 Update Index. It's a bargain at just \$4 (P&H included).

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July		OUT		OUT	combined July/Aug. issue	combined July/Aug. & Sept. (Summer 1989)	Not Published	combined July/Aug. issue	
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where power had been restored shortly after the hurricane . . .

"Gazette reporters, who were out covering the story throughout the storm, wrote their stories on battery powered portable computers early Tuesday at the newspaper office in Edgartown, where there were no electric lights and no telephones. The stories were edited in the portables and transferred into two machines for transport to Nantucket . . .

At 1:30 p.m. Tuesday a skeleton team of *Gazette* staff flew to Nantucket carrying what they needed, including unprocessed black and white film, partially completed newspaper pages and text in the portable computers . . .

Incidentally, Mark was one of the skeleton team that flew to Nantucket.

**George Sherman
At Large!**

OBSOLETE ALREADY!

About a year ago I purchased by Tandy 1100 FD. At the time I thought I was getting a good deal because the price was reduced from some were in the neighborhood of \$900.00 to approximately \$700.00 thru military sales in Europe. And as a SSgt I'm still making payments on it.

Well now that I've become a little bit

more educated about what hard drives can do and the comfort and ease they provide I'm a little upset at Tandy for not offering 1100FD owners an upgrade or trade in offer for that new laptop that Radio Shack is offering for approximately \$1,000.00 that has a HARD DRIVE utilizing what looks like the same housing, screen, keyboard etc. WHAT'S GOING ON?

What makes things worse is I went and visited a Radio Shack store in Las Vegas, NV, on leave during Christmas and found out if I was a good boy I could purchase the 1100FD for a couple bucks above \$400.00.

I think that's enough to make anyone upset. If there is anything you can do to help me find out as to how I can purchase an upgrade kit for my 1100FD or a possible trade in plus cash offer that Tandy might be offering, please let me know. I've learned how to work a database on a computer at work and it would sure be nice to apply the same techniques on my TANDY LAPTOP. Thanks for listening.

**Paul Hutchinson
APO AE 09192**

WP-2 ADDICTION

I just finished reading the December issue and was pleased as usual. I've been a subscriber since issue number two, and

hope to be with you to the end.

Last year I semi-retired my old M100 that I had used since September, 1983. More and more I am using the newer and lighter WP-2 with an added 128K of RAM in my travels. Once I got used to its many quirks and drawbacks, I became addicted to it. I travel overseas a great deal, and have found it ideal for my work.

Now for the point of this letter. I agree with Mr. Peter Schroth that I would like to see some articles that do more than repeat what is in the manual. I realize there is not much you can say about a simple word processor. That brings up my second point: Will Tandy or some third party bring out any other programs for this machine? In the WP-2 manual, Tandy talks about other programs they plan to offer, but to date, nobody has seen or heard of them. I would like to see a simple outline program and a simple expense program. I am doing both now with the word processor, but that is not very satisfactory.

Keep up the good work. I was afraid for awhile that you all were not going to make it, but it seems now as if your hard work is paying off.

**G. Carlton Hill, Jr.
Cincinnati, OH**

COMPATIBILITY:

Model 100, 102, and 200 computers.

APB.BAS: Slim Your Overweight Schedule

Use this utility to print small, customized schedule books.

by Russ Hall

Do you use a pocket appointment book? Have you ever winced at the price some companies charge for their books? Have you wished your book could be more compact and comfortable to carry? Have you ever wished yours began the week on Sunday?

I wrote this Model 100 printing program to address these needs. It prints your blank appointment book, one month at a time, on your dot-matrix printer.

The months are separate books, designed this way so you can carry only the information you need in a smaller package. A few days of the preceding and following months are included for convenience. And since one month doesn't quite take up all the pages, the program prints three memo pages. One of these pages is printed where the calendar leaves extra space, before or after the month you're printing, depending on the month.

These codes are for Epson compatible printers

TWO SIZES

The program prints books in two sizes, senior (3.5 inches by 6 inches) and junior (3 inches by 5 inches). One book in junior size takes only two sheets of paper for the eight pages, but the senior size takes four sheets.

The 20-pound or heavier paper works better for the appointment book since you use both sides. This, by the way, is the only inconvenience. You have to turn the paper around by hand during each operation of the program.

After printing, you have to separate and trim the pages slightly with scissors or a paper cutter. Allow about the same one-half inch below the printing and the one-quarter inch along the sides to make books approximately the sizes mentioned above.

The first page is blank on the right so you can slip it into a cover or anchor the appointment book in your pocket billfold or

```

1 ' Appointment Book Printer ·1989 by R
  uss Hall
2 CLEAR5000:DEFINTF-Z:DEFSTRA-E:DIMB(42)
  ,D(7),C(8),Q(5):ES$=CHR$(27):RV$=ES$+"p"
  :NV$=ES$+"q":OPEN"LPT:"FOROUTPUTAS1
4 CLS:PRINT:PRINTTAB(8)"APPOINTMENT BOOK
  PRINTER":PRINTTAB(10)"<S>ENIOR SIZE BOO
  K":PRINTTAB(10)"<J>UNIOR SIZE":PRINTTAB(
  10)"<Q>UIT":PRINTTAB(10)"Select? ";
6 E=INPUT$(1):PRINTE;:IFE="S"ORE="s"THEN
  GOSUB26:GOSUB25:GOTO30
8 IFE="J"ORE="j"THENGOSUB25:GOSUB26:GOTO
  30
10 IFE="Q"ORE="q"THENMENUELSEBEEP:PRINTC
  HR$(127);:GOTO6
25 FORF=1TO5:READQ(F):NEXT:RETURN
26 FORF=2TO6:READK:NEXT:RETURN
30 FORF=1TO7:READD(F):D(F)=D(F)+SPACE$(1
  0-LEN(D(F))):NEXT
40 FORF=1TO8:READC(F):C(F)=C(F)+STRING$(
  Q(4)-2,95):NEXT
50 FORF=1TO3:READI$(F):GOSUB3000:NEXT:GO
  TO600
119 '          Frequent subroutines
120 CLS:PRINT:PRINT"IS THE PRINTER ON?":
  IFQ(4)=46THENLPRINTES$"0";
122 LPRINTES$CHR$(15):RETURN
130 FORT=1TOQ(2):PRINT#1,"":NEXT:RETURN
135 FORT=1TOQ(3):PRINT#1,"":NEXT
137 I=I+1:CLS:PRINT:PRINTTAB(10)"PRINTIN
  G PAGE"1:RETURN
140 PRINT#1,SC$A(1)"      "A(2):RETURN
141 '          Assemble B$ parts, check
  length
150 CLS:PRINT:PRINT"Working...":FORT=1TO
  42:IFLEN(B(T))<23THENB(T)=LEFT$(B(T),14)
  +" "+RIGHT$(B(T),8)
155 B(T)=ES$+"E"+B(T)+SPACE$(Q(1))+ES$+"
  F":NEXT:F=0:SC$="" :GOSUB137:IFVV=1THEN20
  00
159 '          First sides printing
160 F=F+1:A(1)=B(F):A(2)="" :GOSUB140:IFF
  =4THEN175
170 FORK=1TO8:A(1)=C(K):GOSUB140:NEXT:GO
  TO160
  
```

Continued.

Listing 1. The Appointment Book Program.

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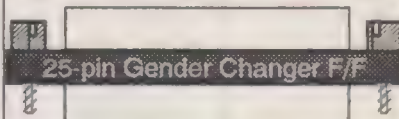
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Circle 5 on reader service card.

```

175 FORK=1TO4:A(1)=C(K):GOSUB140:NEXT:GO
SUB130:GOSUB137
180 IFVV=0THEN2500ELSEF=8:FY=39:GOSUB500
:GOSUB135
190 F=15:FY=32:GOSUB500:GOSUB130:GOSUB13
7:F=22:FY=25:GOSUB500:GOSUB130:GOSUB130
201 ' Second sides printing
210 CLS:PRINT:PRINT"When printer stops,
please turn it off":PRINT"And turn paper
over to print backs":PRINT"And align 1/
4"CHR$(34)" above printer head":PRINT"And
press any key... ":E=INPUT$(1):GOSUB1
20:GOSUB137
220 SC$=SPACE$(Q(5)):A(1)=SPACE$(Q(4)):F
=4:I$(4)=H$:GOSUB3000:A(2)=I$(4):GOSUB14
0:A(2)=I$(1):GOSUB140:A(2)=STRING$(Q(4),
95)
225 FORF=1TO30:GOSUB140:NEXT:GOSUB130:GO
SUB137:F=4
230 A(1)=I$(2):A(2)=B(F):GOSUB140:A(1)=S
TRING$(Q(4),95):FORK=5TO8:A(2)=C(K):GOSU
B140:NEXT
240 F=F+1:IFF<8THENA(2)=B(F):GOSUB140:FO
RK=1TO8:A(2)=C(K):GOSUB140:NEXT:GOTO240
250 GOSUB135:F=36:FY=11:GOSUB500:GOSUB13
0:GOSUB137:F=29:FY=18:GOSUB500:GOTO930
299 ' Other printing subroutines
300 GOSUB140:FORK=1TO4:A(1)=C(K):A(2)=C(
K+4):GOSUB140:NEXT:RETURN
500 FX=F+4:A(1)=B(F):A(2)=B(FY):GOSUB300
510 F=F+1:FY=FY+1:IFF=FXTHENRETURN
520 A(1)=C(5):A(2)=B(FY):GOSUB140:FORK=6
TO8:A(1)=C(K):A(2)=C(K-5):GOSUB140:NEXT:
A(1)=B(F):A(2)=C(4):GOSUB300:GOTO510
599 ' Cannibalized Calendar program
600 CLS:A="Jan31Feb28Mar31Apr30May31Jun3
0Jul31Aug31Sep30Oct31Nov30Dec31"
610 MD=VAL(LEFT$(DATE$,2)):YD=VAL(RIGHT$(
DATE$,2))+1900:GOSUB1130
620 IFM$="Feb."ANDYD/4=INT(YD/4)THENM=29
:IFYD/100=INT(YD/100)THENM=28:IFYD/400=I
NT(YD/400)THENM=29
630 IFMD>2THENYE=YD:ME=MD+1:GOTO650
640 ME=MD+13:YE=YD-1
650 U=INT(365.25*YE)-INT(YE/100)+INT(YE
/400)+INT(30.6*ME)-4781631
660 W=INT(7.1*(U/7-INT(U/7))):H$=M$+YD
$

```

```

929 ' Main screen, Figure days for book
930 CLS:PRINT"A=any month, Horiz arrows=
month change,Vert arrows=year change, Q
=Quit, P=printbook. Please adjust paper
up 1/4"CHR$(34)" aboveprinter head."
940 I=0:VV=0:PRINTTAB(7)"MONTH TO PRINT
"RV$" "H$NV$:GOTO1020
960 Y=7-W:X=8:FORT=YTO1STEP-1:X=X-1:B(X)
=D(X)+M$+STR$(T)+YD$:NEXT:GOSUB1100
970 FORT=1TOW:X=X-1:B(X)=D(X)+M$+STR$(M)
+YD$:M=M-1:NEXT:GOSUB1130
980 X=1:Z=8:FORT=Y+1TOM:B(Z)=D(X)+M$+STR
$(T)+YD$:X=X+1:IFX=8THENX=1
990 Z=Z+1:NEXT:M1=M:GOSUB1130:FORT=1TO42
-(M1+W):B(M1+T+W)=D(X)+M$+STR$(T)+YD$:X=
X+1:IFX=8THENX=1
1010 NEXT:GOSUB1100:GOSUB120:IFW>5THENVV
=1:GOTO150ELSEVV=0:GOTO150
1019 ' Input subroutine
1020 PRINT:PRINT"Press a key? ":E=INPUT
$(1)
1030 IFE="Q"ORE="q"THENMENU
1040 IFASC(E)=29THENGOSUB1100:GOTO620
1050 IFASC(E)=28THENGOSUB1130:GOTO620
1060 IFASC(E)=30THEN1150ELSEIFASC(E)=31T
HEN1160
1070 IFE="P"ORE="p"THEN960
1075 IFE="A"ORE="a"THENCLS:PRINT:PRINT"I
nput Year ("RV$;YD;NV$"): ":INPUTYD:PRI
NT"Input Month ("RV$;MD;NV$"): ":N=MD:I
NPUTN:IFN>0ANDN<13THENMD=N:GOSUB1090:GOT
O620ELSEBEEP:PRINT"The month must be bet
ween 1 and 12":FORK=1TO1000:NEXT:GOTO107
5
1080 GOTO1020
1090 M$=MID$(A,(5*MD)-4,3):M=VAL(MID$(A,
(5*MD)-1,2)):M$=M$+"."YD$=","+STR$(YD):
RETURN
1100 IFMD=1THENYD=YD-1:MD=12:ELSEMD=MD-1
1120 GOSUB1090:RETURN
1130 IFMD=12THENYD=YD+1:MD=1:ELSEMD=MD+1
1140 GOSUB1090:RETURN
1150 YD=YD+1:GOSUB1090:GOTO620
1160 YD=YD-1:GOSUB1090:GOTO620
1999 ' Third list printing routine
2000 A(1)=I$(3):A(2)=""GOSUB140:A(1)=ST
RING$(Q(4),95)

```

Continued.

T-200 Enhancement

XOS (Cross bank Operating System) will enhance your Tandy 200 and allow the three banks to share programs and data. XOS will bring a new level of computer functionality at the MENU, from BASIC, TEXT, and TELCOM.

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Circle 121 on reader service card.

```
2010 FORF=1TO31:GOSUB140:NEXT:GOSUB130:G
OSUB137:GOTO180
2500 F=8:A(1)=B(F):A(2)=IS(3):GOSUB140:A
(2)=STRING$(Q(4),95)
2510 FORK=1TO8:A(1)=C(K):GOSUB140:NEXT
2520 F=F+1:A(1)=B(F):GOSUB140:IFF<11THEN
2510
2530 FORK=1TO4:A(1)=C(K):GOSUB140:NEXT:G
OSUB135:GOTO190
3000 N$=SPACE$(Q(4)-LEN(IS(F)))/2:IS(F
)=ES$+"E"+N$+IS(F)+N$+ES$+"F":RETURN
5099 'DATA- Length of fill blank,LF's wi
thin page,LF's to new page,Length of lin
e,Length of spaces to other side (back)
printing
5100 DATA 23,16,8,46,39,31,34,34,54,23
5110 DATA SUNDAY,MONDAY,TUESDAY,WEDNESDA
Y,THURSDAY,FRIDAY,SATURDAY
5120 DATA "9 "," ","12"," ","3 "," "
,"6 "," "
5130 DATA "PEOPLE TO VISIT/CALL","THINGS
TO DO","THINGS TO GET"
```

End of listing.

1'	Appointment Book Printer •1989 by Russ Hall
119'	Frequent subroutines
141'	Assemble B\$ parts, check length
159'	First sides printing
201'	Second sides printing
299'	Other printing subroutines
599'	Cannibalized Calendar program
929'	Main screen, Figure days for book
1019'	Input subroutine
1999'	Third list printing routine

Figure 1. Explanatory descriptions for the program.

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calculator cover.

THE CODE

The program sends the printer control codes from lines 120, 122, 155, and 3000. Line 120 uses the three-quarter line feed code, line 122 uses the condensed print code, and line 155 uses the bold or emphasized on and off codes. In this line it is the ES\$+"E" and ES\$+"F" segments. Line 3000 is the same as 155 (ES\$ is set to CHR\$(27) in line 2).

These codes currently in the program are for the Citizen 120-D or Epson compatible printers. Most dot-matrix printers support these commands, or if not with these exact characters, something similar. Your printer manual should have information on this.

**You can also easily
modify the program
to print the book to disk**

You can also easily modify the program to print the book to disk if you want. Place remarks at beginning of lines 120 & 122 to avoid sending data to the printer, place a RETURN as line 123, and change the output buffer command in line 2 to access the disk drive. Be advised that one book takes about 29K of disk space!

I hope this little program can be of some use to you.



COMPATIBILITY:

MS-DOS compatible computers.

Software Bridge: Make Your Files Compatible With Everything!

You don't have to give up your favorite software to be compatible with someone else's software. Software Bridge will cross the gap for you.

by Terry Kepner

"Be compatible!" is the war cry of the office manager. "Everything the same and no deviation!"

Just because *your* word processor is better, faster, easier, what-have-you, is no reason for you to be out of step with everyone else in the office, these faceless cretins reason. Never mind that *WordPerfect*, with its four-megabyte support files, won't run on your laptop; compatibility must be maintained at all costs!

Fortunately, you don't have to surrender your individuality to those face-

No deviations!

less fiends of office automation, you can still do your thing and keep the bosses happy. All you need is *Software Bridge*.

WHAT IS IT?

Unfortunately, every word processor, spreadsheet, and database manufacturer uses different codes for common activities such as bold face, underlining, italics. Each one has a different idea for the best way to define and implement headers, footers, indices, margin control, and the host of other features people

PC Word Processors

ASCII & Intelligent ASCII (Email)
DCA/FFT
DCA/RTF
DEC WPS Plus — versions through 3.1
DisplayWrite 2, 3, 4, & 5
First Choice — versions through 3.0
IBM Writing Assistant 1.01
MASS 11
Microsoft RTF 1.0
Microsoft Word/Windows (through RTF) 1.0
Microsoft Word — versions through 5.5
MultiMate — versions through 4.0
Navy DIF
Nota Bene 3.0
PFS:Write — versions A, B, & C
Professional Write — versions through 2.2
Samna Word III, IV, IV Plus
Smartware II 1.5
Sprint 1.0
Total Word 1.2
Volkswriter 3, 4
Wang PC — versions through 2.6
WordMARC Composer
WordMARC Composer Plus
WordPerfect — versions through 5.1
WordStar — versions through 6.0
WordStar 2000 — versions through 3.5
XYwrite — versions through III+

Macintosh Word Processors

MacWrite II — versions through 1.1
Microsoft Word — versions through 4.0 & "Fast Save"

WordPerfect — versions through 2.0

Databases

DataEase — Version 4.2
dBase III & IV
dBase III
Enable — Version 3.0
First Choice — versions through 3.0
FoxBase 2.10
Framework III
Microsoft Works — versions through 2.0
Paradox — versions through 3.5
Q&A — versions through 3.0
R:BASE — versions through 3.1
R:BASE System V 1.0
Personal R:BASE 1.0
Reflex — versions through 2.0
Smartware II 1.5

Spreadsheets

Enable — Version 3.0
First Choice — versions through 3.0
Framework III
Lotus 1-2-3 — versions through 2.2, 3.1
Lotus Symphony 2.0
Microsoft Excell — versions 2.0 through 3.0
Microsoft Works — versions through 2.0
Mosaic Twin Advanced
PFS Professional Plan
Quattro Pro
Smartware II 1.5
SuperCalc 5

Figure 1. Software Bridge can translate files between any of these programs.

SOFTWARE REVIEW

desire in their software.

That's what makes a headache for office managers. *WordStar* files look like complete garbage when Microsoft *Word* tries to read them. *WordPerfect* can't make head nor tail of *Xywrite* files. And god forbid you should want to load a *Multimate* file into *Nota Bene*!

To make it possible for people to share files, managers insist on using only one piece of software for word processing, another for spreadsheets, and maybe a third for databases. They have to ensure that the files created by one person are readily available to everyone

else, especially for projects with many people working on different facets that must all dovetail together.

Software Bridge removes that "one allowed software" requirement. It lets you use almost any word processor, spreadsheet program, or database, and still manage to trade files easily and quickly with other workers.

Thus, you can work in *WordStar*, your coworker can use *Summa Word III*, and your boss can use *WordPerfect*, and everyone can still read everyone else's files without losing the formatting already in place. What is underlined in one, ap-

pears underlined in the others. The header and page numbering that appears at the top of every page in one, appears in the files of the others, with the proper control codes.

Software Bridge is a translation utility. You tell it the originating file's program, the destination user's program, and then batch select the files you want transferred. Push the go switch, and it automatically converts the selected files into a format readable by the destination program.

Software Bridge even makes your spreadsheet and database program word processor friendly! Need those summary figures in *Lotus 1-2-3* transferred to *DisplayWrite 2*? No problem! You can embed any or all the data into your favorite word processor, selecting any rows or columns you need. They don't have to be contiguous, either.

Similarly, you can import database information into your reports. This makes it a cinch to include a copy of John

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**You can import
database
information into
your reports.**

Q. Company's ordering record in your letter to the boss explaining why his complaints are unfounded.

Unfortunately, you can't reverse the direction and move word processor data into either a spreadsheet or database file. The rules of organization are just too difficult for the program to read your mind and know where you want data.

HOW DOES IT WORK?

Installing *Software Bridge* is easy. Put the first distribution disk in drive A, type *INSTALL*, and answer a few questions regarding where you want the program and its files on your hard drive. Next, it gives you a list of supported programs; see figure 1. Select the programs you expect to trade files between. You can, if you have the space on your drive, install all the supported programs. Doing so uses about four megabytes. Installing only three or four uses one and a half megabytes.

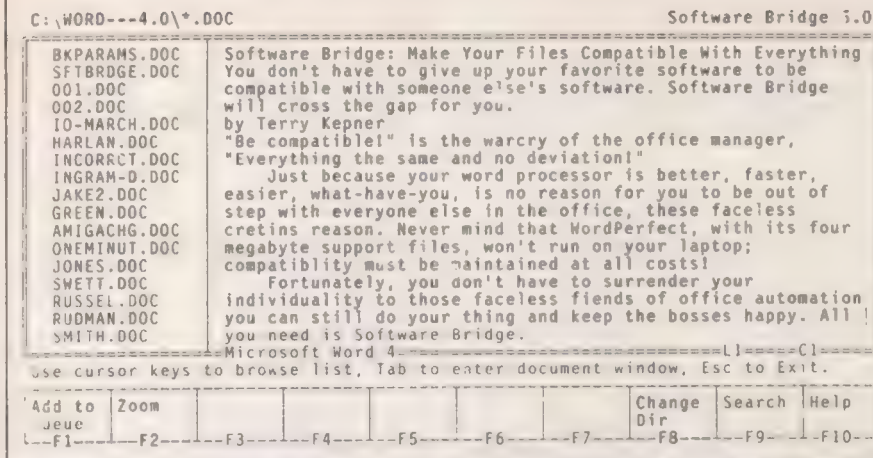


Figure 2. The screen for adding files to the Translation Queue. The file under the cursor is, in this case, SFTBRDGE.DOC.

Once it's installed, just run the program whenever you want to transfer a file from one format to another. The program will present you with four options: Translate a file from program A to program B format, translate a file from program B to program A format, system setup, and end program. The program names are displayed in the choices — that is, if you normally trade files between *WordStar* and *Word*, the menu choices would indicate 1 = Translate: From *WordStar* 6.0 to MS *WORD* 4. and 2 = Translate: From MS *WORD* 4 to *WordStar* 6.0.

Picking 1 or 2 gives you a small menu where you can type the name of the file or files you want converted or press F2 and type in the name of the subdirectory where you keep your files. The second method gives a list of filenames down the left side of the display, while the right side, about sixty columns wide, displays what it finds in the file currently highlighted.

As you scroll through the directory list, the righthand side changes to reflect the file under the highlight. An easy and convenient method of making sure you are selecting the correct files for translation. Unfortunately, this file display method slows down your scrolling, as it takes time for the program to retrieve the data and display it. A small price to pay for accuracy.

After selecting a file, you can tell the system to translate it or to remove it from the queue. When you translate the files selected, the program provides a running list of both the target programs and the finished translations, so you can easily track the program's progress.

Selecting 3 gives you a menu where you can select the program A choice, the

program B choice, system parameters, set program A parameters, set program B parameters, edit the character filter, edit the typestyle filter, get help, and exit to the previous menu.

Selecting the word processors for destination and origin is easy, just use the arrow keys and press ENTER. Next, system parameters lets you define destination directory, automatic filename conventions (use the origin name, type in a name, or simply number them), automatic filename extensions (i.e., *WORD* documents get .DOC, *WordStar* files get .WS, and so forth), and substitution of untranslatable characters (i.e., you know that MS-*WORD* won't import ASCII character 193 properly, so you flag it here with the character you can search and replace in the translated file) for program A and B.

The character filter is a much more powerful filter than that in the program parameters subsection. It lets you define direct substitutions for the entire character set, including the IBM graphic characters.

The typestyle filter eliminates the problems of different typestyles in the word processors. For example, *WordStar* defaults to Courier font. If your imports from Microsoft *Word* are always in Helvetica, you can set the flags here so that you won't have to go into the translated file and manually select the correct typestyle. This is especially useful when dealing with file translations to and from a Macintosh.

IN SUMMARY

Software Bridge is the solution for anyone who has to trade files with people who don't all use the same word processor, spreadsheet program, or da-

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tabase program. With the parameters for the transfers set, you can concentrate on what needs the most work — the information in the documents.

Assuming that the features are available in both programs, you can translate any document between the programs without losing ANY of your formatting instructions or work. Imagine being able to translate a WYSIWYG *Word* document to a WYSIWYG *WordPerfect* document, intact, in only a few seconds! *Software Bridge* can do it!

Product Specifications and Suppliers

Software Bridge — \$149

MS-DOS software for transferring data files between word processors, spreadsheets, and databases, with formatting commands retained and translated.

Requires at least 384K RAM, a hard drive, and MS-DOS 2.0 or greater. Cannot be used on a dual floppy system.

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Chicago, IL 60611
(312) 329-0700.

Troubleshooting: Part 1

If you've got trouble, you can do more than just say "help."

by Ed Dahlgren

Troubleshooting Steps

1. *Verify*
 - a. Is it your error or the computer's?
 - b. Is it consistent or intermittent?
2. *Environment [or Define]*
 - a. What are you doing when the problem happens?
 - b. What did you do just before that?
3. *Dink Around [or Explore]*
 - a. What's the "minimum problem configuration"?
 - b. What else can you do to induce the problem?

Everyone who likes getting something repaired, hold up your hand. Okay, now everyone who likes going to the dentist? That's what I thought... same people!

Denny Thomas reported some bad experiences with getting his WP-2 repaired (January '92). How'd you like some inside tips that help the process go more quickly, smoothly, and successfully the next time you're in the unfortunate position of handing over your computer gear to Mr. Fix-it?

Sounds good? Then read on. But first, a note about what I'm going to say. I'm a field service engineer—a Maytag Repairman in the world of bits and bytes. I work for a major computer manufacturer (but not the one based in Ft. Worth) and I own several different Tandy computers.

So this advice is a cross between what you'd probably hear from anyone who fixes things for a living and what I routinely encounter when I walk through the doors under that big, red "Radio Shack" sign and plunk down a Model 100... or 200, or Color Computer, or 1000 SL/2, or 2000, or...

This first article covers nontechnical troubleshooting. You might need a screwdriver, but only if you've already used one to install an option inside your little beastie. In fact, the process is a generic one for finding a problem within any kind of system, computer or otherwise.

THE STARTING POINT

The first rule: Do as much troubleshooting as you can before you head for the store. It seems as though I'm never as lucky as Denny, whose WP-2 had a known bug. The problem you're facing may be famous, but often it's an inside secret.

(Products are shipped with known defects all the time, unfortunately. This

applies to both hardware and software—for a great story on the software development process read Ed Bott's article about *WordPerfect for Windows* in the January *PC Computing*. *WordPerfect's* executive vice president, Pete Peterson, said, "With revision 1.0 of anything, you're using the customer for a beta [test] site. We recognize that. It's a ferocious competition, and the stakes are so big." He said this a month after they'd fixed 5,653 bugs in the program!)

ARE YOU STILL WITH US?

Back to troubleshooting. If the problem's a new one for you, find out everything you can about it. Do some digging on your own so other people can be more helpful and so you don't waste their time. It's possible, of course, to skip all the detective work and go directly from "Arrgh!" to "Help!"—but remember what happens when you don't pass GO.

The best-case scenario is that someone either immediately recognizes the jam you're in (because it has been seen before) or he or she can do a Vulcan mind-meld with either you or your computer. More likely, the repair people will have to spend time doing this same troubleshooting themselves.

If you're paying for their labor, remember that the meter is running. If you're not paying for the help, you're still running up a heck of a debt to those people. And in the worst-case scenario, your problem goes unresolved.

STEP ONE

Step number 1 is always VERIFY. Sounds dopey, but make sure you've got a problem! Are you using the hardware and software that you thought you were using? Are you maybe trying a Hayes-type command on the internal modem in TELCOM? Or you typed a Write ROM command—is the chip actually installed? Like that.

(I'm not even going to suggest that you check to make sure the power's on, the adaptor's plugged in, or that the batteries are okay. You've done that, right?)

If you're not absolutely positive you've performed the procedure exactly right, then check the manual! It's easy to be almost right, especially in an environment like command lines in MS-DOS or where you switch between slightly different BASICs on different machines. (I confess!)

Okay, so you're sure it wasn't pilot error. Can you repeat the problem? Does it happen three times in a row? Say you try it six times and it only happens twice.

HARDWARE REPAIR

The problem is **THERE**; you're not crazy. But it'll be harder for someone else to find and fix. Let them know it's *intermittent*, a word that brings dread to mechanics everywhere.

And, by the way, if the technician can't verify the problem you'll get your equipment back with naught to show for all the time and energy everyone's put into it but a spiffy *NTF*—no trouble found.

STEP TWO

After you've verified the problem, step number 2 is to find out as much as you can about the circumstances leading up to the problem. Write down what hardware and software you're using together, along with revision levels and versions if you can find them (e.g., *WordPerfect 5.1*).

What keys did you punch that caused the problem? Like, "In *BASIC*, you type *RUN 'FROG* and it hangs." Then, what action did you take just **BEFORE** the one that caused the problem? Two notes about that.

First, the bug could actually be in what you ran just before the procedure that blows up. Maybe when that other one terminates it leaves something set wrong; then when you *RUN 'FROG* the error shows up because *FROG* expects to find things (ROM hooks, environment variables, etc.) back to normal.

This is a special case of an increasingly vexing problem, that symptoms don't always occur where the problem is. The more complicated the system—and they're growing more complex by the hour—the more often this happens. It's especially common on networks and amounts to job security for those of us who specialize in that area. (Insert smiley-face here!)

STEP THREE

Step number 3 is what's technically known as *drinking around*. First, remove all options and see if the problem persists. Well, if you're having trouble with *Ultimate ROM II*, don't pop that out! But disconnect your Portable Disk Drive. Unplug the power adaptor. And for goodness sake, take out that 256K RAM!

Re-verify. Oh, good—you've still got the problem. (If not, reconnect your options one at a time until you find the offending unit. Problem still gone? Reconnect your options *TWO* at a time, etc.)

When you're down to the "minimum trouble configuration," try to find other ways to make the thing go blooey. Let's say everything hangs up when you're in *TELCOM* and sending something through an external modem at 2400 bits

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per second (bps). Try sending at 300 bps. Try disconnecting the external modem and sending through the internal modem at 300 bps.

Try going into *TEXT* and *SAVE*ing a file to another Model 100 at various speeds. Hook them together with a null modem cable and type *SAVE COM:38N1E* (for 300 bps). Still blows up? It's beginning to sound like the serial port. Try doing the same thing from *BASIC* with a program file.

He said this a month after they'd fixed 5,653 bugs in the program!

The point is to isolate the offending piece of hardware or software by trying as many variations on your central theme as possible to see which carry the trouble with them and which don't. In all but the simplest cases this information is very valuable in pinpointing exactly when and where the problem occurs.

And being able to state confidently and precisely what the symptoms are helps in other ways, too. First, you'll **KNOW** there's a problem and won't have a crisis of confidence when someone questions you about it.

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DROOPING EYELIDS

You won't be like the intended victim in a mystery I read recently. She saw that the murderer had a drooping eyelid. But when the police asked, "Does the person have a drooping eyelid," well, she couldn't be certain. This did nothing for her self-esteem, for other people's opinion of her, or for their ability to help when the knife was coming nearer, and nearer ...

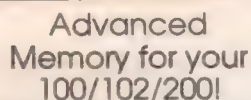
The second way that your well-defined knowledge will help is in convincing someone to volunteer his or her assistance, the subject of part two of this series. It's all too easy for a person to find something else to do (like clipping his nails or walking the dog) when the alternative is to go on a vaguely defined "fishing trip" with you and your possibly ailing computer.

And finally, this information will help if you decide to take your problem into Radio Shack for repair. That's in part three. The more ya' know about where it mighta been broke, the better ya' can tell whether it got fixed.

In the next installment I'll talk about the resources available for solving your problem, short of handing it over to Radio Shack for repair. But if you **DO** have to go that route, the final chapter (part three) will give you some tips on how to take an active role and manage the process for more successful results.

Good luck, and see you next month!

You can contact Ed Dahlgren by mail at 941 E. Moreno Ave., Colorado Springs, CO 80903 (please enclose an SASE when requesting a reply); on CompuServe (70353,2345); or on Delphi (ED-DAHLGREN).



extRAM is a 32K byte read/write memory expansion that fits into your Tandy's internal option ROM socket. You can use it *either* as an additional RAM bank, to store .DO, .BA and .CO files, or as an additional ROM bank, to run the kind of software that normally runs from option ROM chips.

extrAM fits into the option ROM socket in the 100/102/200. A quick 2-pin plug connects extrAM to battery and WR lines, all under the snap-on cover. Easy to install.



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Of course, we still offer you the capability of using Wilson Van Alst's R2D2X utilities to save and load ROM images on the Tandy portable disk drive, or to save them on disk on another computer.

And, of course, extRAM still comes with its stand-alone EXTRAS software for using it as a 32Kbyte expansion memory to store your text and program files.

We accept Visa/Mastercard, check, money order (\$ U.S.) or qualified Purchase Order.

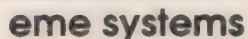
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PRODUCT UPDATE

COMPATIBILITY: Tandy 100, 102, 200.

Weetax Upgrade

Even this sturdy little program occasionally needs updating!

1989 Extraordinary Sales Tax	
02/12	26.80 microwave oven, #1430
02/19	8.93 tools, Jensen, #1431
04/08	13.30 Banana Republic, #1436
05/20	8.76 Goldwater's, #1561
<hr/>	
\$57.79	\$49.03 in TAXCAT file ***
1989 Unreimbursed Dental Expenses	
1989 Unreimbursed Medical Expenses	
04/08	24.00 Mayo Clinic "High Letter"
04/29	134.00 Pearle Vision, #1542
<hr/>	
\$158.00	

Figure 1. Notice the unneeded 1989 Unreimbursed Dental Expenses line in the sample printout.

```

S
oftware Ver-
sand has up-
graded their
popular Weetax software
package. They have
asked for our assistance in
reaching customers who
might not have filled out
and returned their war-
ranty card. Basically, all
copies of the Weetax
package shipped prior to
August 26, 1991 need
changes made to the
code in TXFSUM.BA. These changes
will take only about ten minutes and can
easily be done in BASIC.

```

ELSE L=2:GOSUB 30. The only change is L=2.

- * Change the beginning of line 26 to read 26 L=1:GOSUB 30:. The rest of the line is unchanged.

Left Margin Control— You may prefer a wide left margin from the F4 - Print output. The following changes increase the margin to six spaces. The mismatch error ("49.03 ..." in figure one) is moved to the left three spaces to avoid overrunning the right margin.

- * Change line 5 to read 5 F\$ = "taxcat"
:G\$=","txfsum":L\$=SPACE\$(6):H=1.
The only change is the L\$ =
SPACE\$(6):.
- * Change line 20 by adding L\$+ and
removing three spaces from between
the two number formats: 20 E\$ = L\$+
" \$ \$ # # # # # # # # # # , . # #
\$#####.##".
- * Change line 23 by adding L\$+: 23
PRINT #2,L\$+" _____":IF T<>
D(I) THEN 25.
- * Change line 37 by adding L\$+ in front
of TITLE\$: 37 GOSUB 35:T=
0:L=1:GOSUB 30:PRINT #2, L\$+
TITLE\$:RETURN.
- * Change line 44 by adding L\$+ after
the PRINT#2: 44 PRINT #2,L\$+L
EFT\$(A\$,5)+C\$+ MID\$(A\$,6,8) + C\$
+MID\$(A\$,14).



**They have asked
for our assistance.**

First, the explanations:

Pagination — The F4 - Print function will page-break erroneously when you have multiple empty categories. In the print sample below, from page fifteen of the Weetax manual, "1989 Unreimbursed Dental Expenses" appears because it is referenced in TAXCAT.DO and because there is an *Auxiliary File* bearing that heading. But to date, there have been no entries under that category, see figure one.

Making the following changes corrects an error in the cumulative line count.

- * Change line 0 (zero) to read *Version 8/26/91.*
- * Change line 22 to read *F\$= FN\$(I)*
~~:CLOSE 1:GOSUB 39:IF T=0 THEN 26~~

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When we designed *Disk+* we did it out of necessity. We wanted a way that we could just connect a Model 100 to our desktop computer with a cable and save files onto the desktop's disk drive. We wanted it to be so simple to use it would be self-explanatory.

Picture this. *Disk+* comes to you on a Snap-in ROM and a diskette for your desktop. You take a quarter and open the little compartment on the back of your Model 100. Then you just press the ROM into the socket. *Disk+* appears on your main menu just like a built-in.

You connect your Model 100 to your other computer using an RS232 cable (available from TMNE for only \$20).

You just place the *Disk+* diskette into the desktop's drive and turn on the computer. It powers up automatically and says "awaiting command" on your desktop's screen. Then you just put the widebar cursor on the Model 100 main menu on *Disk+* and press ENTER. You are shown your RAM files arranged just like the main menu.

To save a file to your other system's disk drive, you just move the widebar cursor to the file you want to save and press ENTER. It is saved instantly with no further action.

To look at the disk directory, you just press a function key on your Model 100. You see immediately the disk directory on your Model 100 screen, and it is arranged just like your Model 100's main menu.

To load a file from the diskette to your Model 100, you just move the widebar cursor to the file and press ENTER. The file is transferred to your Model 100's RAM instantly. You can press F8 and go back to the main menu, and the file you loaded from diskette is there, ready to use.

It is so nice to be able to keep your documents, programs (both BASIC and machine code) and *Lucid* spreadsheet files on the diskette, and bring them back when you need them. All files are ready to run or use with no changes or protocol by you.

If you have access to a desktop computer and don't have *Disk+*, then evidently we have done a poor job telling you about it.

All files and programs that you load or save, go over and come back exactly as they are supposed to be because of full error checking. This guaranteed integrity is really a comfort. *Disk+* is wonderful in so many other ways. For example, you can do a "save all" of all your RAM files with just a touch of a function key. That group of files is saved on the diskette under a single filename with a .SD (for subdirectory) extension. Any time you want, you can bring back all those files at once, or just one or two if you like, again with one-button ease.

Disk+ takes up no RAM. That's zero bytes either for storing the program or for operating overhead.

What really excites most *Disk+* users is text file cross compatibility. Your Model 100's text files are usable on your desktop computer, and your desktop's text files become Model 100 text files.

This means you can write something on your Model 100, and with *Disk+* transfer it

instantly to your desktop and start using it right away on your bigger computer. Or the way we like to work is to type in a document on the desktop computer and then transfer it to our Model 100 with *Disk+*. Then we print out the document, beautifully formatted, using WRITE ROM.

Disk+ works with just about every micro sold, from IBM PC and its clones, to all Radio Shack computers (yes, all), to Apple II, Kaypro, Epson and most CPM. Just ask us. More than likely, your computer is supported.

Incidentally, hundreds of Model 100 owners have gone to their Radio Shack stores and bought a color computer because it is so low priced, and with *Disk+* they have an inexpensive disk drive.

And if that weren't enough, how about this: *Disk+* also provides cross-compatibility between different computers like IBM, Apple or the Model 4 using the Model 100 as the intermediary device. Quite a feature!

The snap-in ROM is really great because you can use other ROMs like *Lucid* or WRITE ROM. They snap in and out as easily as an Atari game cartridge and you never lose your files in RAM.

Anyone who ever uses *Disk+* simply can't do without it. But so many times we have had new users call us and say, "Wow! I had no idea when I ordered it that *Disk+* would be so fantastic. I just couldn't believe that I could use my desktop computer's disk drive with my Model 100 just like it is another main menu."

That's why we sell *Disk+* on a thirty-day trial. If you aren't completely satisfied, return it within thirty days for a full refund. Priced at \$149.95 on Snap-in ROM. MasterCard, Visa or COD.

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Radio Shack Introduces New Tandy 3820 HD Notebook Computer

Radio Shack introduced the new Tandy 3820 HD business computer, its first notebook PC to ship with Microsoft Windows 3.0 software. Tandy has made significant enhancements to the 3820 HD, including increasing the standard memory to two megabytes (MB) and making it expandable up to 8 MB, changing the VGA display to a one-to-one ratio to provide a diagonal viewing area of nine inches, and shipping the computer with both the MS-DOS 5.0 operating system and Windows 3.0 software pre-installed on its internal 60 MB hard drive.

Other standard features of the 386sx 20 megahertz 3820 HD are one 3.5-inch 1.44 MB internal floppy disk drive, 640 x 480 VGA graphics with thirty-two gray scales, an 84-key keyboard with 101-key emulation, real-time clock with battery backup, internal slots for an optional modem and 80387sx-20 coprocessor, one combination parallel printer/floppy disk drive port, one RS-232C serial port, and connections for both an external keyboard and monitor.

The 3820 HD also has a removable NiCd battery that provides power for up to three hours before needing a recharge. The battery can be quick-charged in two hours, and a lightweight AC adapter/recharger is included.

To improve battery life and prevent accidental battery drain, the 3820 HD has a built-in Power Management Controller with *Resume* and *Standby* modes. *Resume* allows users to turn on the 3820 HD and conveniently return to the exact position in an application where they were working before turning off the computer. In *Standby* mode, the display, hard disk drive and modem can be "shut down" after a user-designated time period to conserve battery power.

In addition, the Tandy *Power-View System* allows the user to

New Class One Pocket Fax Modem Features Ability To Fax From Within Application

Solectek Corporation announces a new Pocket Fax Modem compatible with IBM and Macintosh computers. The fully featured Pocket Fax Modem is available for DOS, Windows, and Macintosh applications.

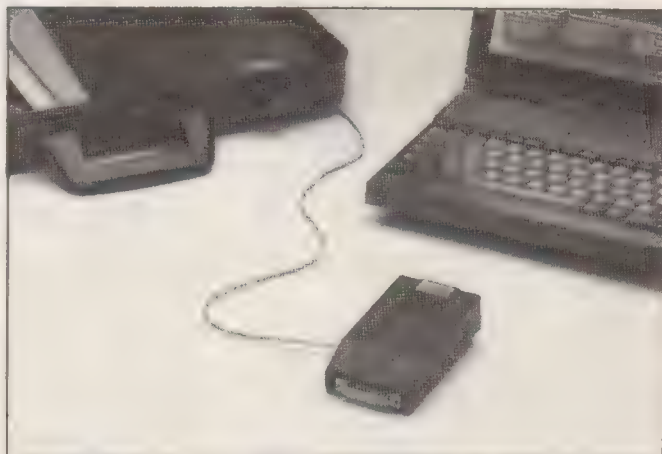
The products eliminate confusing keystrokes by allowing users to send a fax from within any application via a pop-up fax menu. Users can send a fax message without leaving their application by simply entering a telephone number and using normal printing commands.

Advanced fax software further simplifies operation by allowing users to continue working within their applications without interruption while their fax messages are sent or received transparently in the background.

monitor battery status and receive visual warning when the 3820 HD is accidentally left on with the display closed. Another convenient feature of the 3820 HD is Tandy's unique *Key-Switch* technology. With *Key-Switch*, users can interchange the *Caps Lock* key with the *Ctrl* key so that the full-size keyboard layout resembles and functions like a standard typewriter.

The 3820 HD weighs 6.7 pounds and its footprint measures just 1.7 x 12.2 x 10 inches (HxWxD). Options for the 3820 HD include a 2 MB memory upgrade (25-3508, \$399.95); a 4 MB memory upgrade (25-3527, \$1,099); an internal 2400 bit-per-second (bps) modem (25-3525, \$199.95) or a combination 2400-bps modem/9600 send fax (25-3509, \$249.95); a replacement battery (25-3526, \$99.95); executive leather carry case (25-3518, \$99.95); and a choice of durable cloth carry cases (\$39.95-\$59.95).

The Tandy 3820 HD notebook PC has a one-year limited warranty and sells for \$2,999 at more than 7,000 participating Radio Shack technology stores and dealers nationwide. Or circle 62 on reader service card.



The Solectek Pocket Fax Modem for all computers.

By creating and sending a fax message directly from a computer, users are able to send high quality fax messages without the distortion and skewing often seen on scanned images from stand-alone facsimile machines.

The DOS Pocket fax Modem includes an embedded Epson printer emulation which allows users to send faxes with the same fonts and graphics used in an Epson FX printer.

The Mac and Windows Pocket Fax Modems tap powerful graphical interfaces and feature text rotation, font substitution and direct Adobe Type Manager support. As a result, users can send faxes which look identical to what they see on their screen.

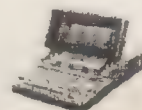
Solectek's Pocket Fax Modem features a 9600/4800 bps send and receive fax and a 2400 bps data modem. The DOS and Windows versions feature MNP5 for data compression and error correction. The Pocket Fax Modem is the first portable fax modem utilizing the new Class One standard chip set from Rockwell. The new technology features a reduced instruction set providing advanced capabilities while resulting in economies which are passed to the consumer.

The compact Pocket Fax Modem weighs 3.5 ounces and measures 1.25 by 2.75 x 5 inches. Fax and communication software is in-

cluded on both 5.25- and 3.5-inch diskettes for DOS and Windows models. The Macintosh version includes fax software on standard media. The product can be powered from an internal battery or external power adapter, and features a "sleep mode" to conserve battery life when the unit is not active. A separate power adapter, telephone cable, and a two-foot computer cable is included. Solectek provides a two year warranty.

For extra flexibility, the Solectek Pocket Fax Modem is fully compatible with the Solectek Laptop Phone Link, Model PL200. The Laptop Phone Link allows any fax or modem to communicate directly through any multiline, digital, PBX, or hotel telephones, thereby eliminating the need for a dedicated telephone line.

The DOS Pocket Fax Modem is compatible with all DOS applications and retails for \$299.95. The Windows and Macintosh versions retail for \$349.95. For more information, contact Solectek Corporation, 6370 Nancy Ridge Drive, San Diego, CA 92121, 800-437-1518. Or circle 63 on reader service card.



DEFUSR appears monthly to answer your questions about Tandy notebook computers.

**Send your queries to: DEFUSR, PORTABLE 100,
P.O. Box 428, Peterborough, NH 03458-0428.**

Please enclose a stamped, self-addressed envelope for our reply.

X-TEL COMMUNICATION PROBLEM

I have been using my Model 100 and X-Tel software to upload and download files (via XModem) to BBS's and my desktop unit for years and have never really experienced any problems.

Lately, however, when I attempt to download .BA files from my PC (an 8MHz XT clone) to the Model 100 using X-Tel with XModem protocol, the Model 100 will indicate that the correct number of XModem blocks have been transmitted by the desktop however, when I LOAD and LIST the file in BASIC, I find that only a small part of the file has actually been downloaded. The portion that is downloaded is generally corrupted as well.

This problem occurs regardless of which telecommunications program I may be using on the desktop PC. It happens when I use HardWire with XModem protocol to exchange files with the Model 100 and when I use QModem V4.31 XModem protocol to download the files.

I normally use my second COM port on the XT, set to 4800 baud or slower, 8 bits, NO parity, 1 stop bit, XOn\XOff Enabled. The Model 100 is configured exactly as the PC and I use a good quality null modem cable.

It should be noted that I have no problem downloading or transferring ASCII files between the Model 100 and PC as long as the speed is 4800 baud or slower. Nor do I experience problems downloading from remote BBS's such as GENIE — via XModem and X-Tel.

I am a relatively experienced MS-DOS and Model 100 user. However, I have not been able to crack this problem. Can you offer a diagnosis?

**Gerard F. Trippertree
Little Ferry, NH**

My first question is did this work with HardWire and QMODEM previously? If so, then I suspect a corrupted X-Tel is behind the trouble. Next, is this PC new to you? If it is, is it really an IBM or is it a clone? Many of the clone PCs claim to be 100% compatible, but they really are not. I've run into the non-compatible problem with some of the hardware peripherals for the IBM market. The peripherals work with some PCs and not others. The problem almost always turns out to be the PC's fault.

Beyond that, I am at loss as to the problem. Anyone else care to comment?

-tk

The problem almost always turns out to be the PC's fault.

TANDY 200 WORLD SENSING

I have a Tandy 200 (w/72K RAM) laptop that I would like to connect to an outside-world sensor. This sensor provides a brief (approx 1/10 sec.) switch closure about every minute or so. I need the Tandy to count the closures, as they come in.

I cannot figure out how to interface the sensor's switch to the computer. I hooked it up in several ways to the serial port and tried the ON COM GOSUB ...

and COM ON commands, but never could get any information into the Tandy. Does anyone have a suggestion on how to do an interface? I imagine anything that works on a Tandy 100 or 102 would also work on the 200.

On a different topic, sometimes the Tandy 200 refuses to work correctly. When you turn it on, it will darken all the pixels of the screen and refuse to turn off. The Reset switch on the back has no effect. The Memory Power switch on the bottom will kill the machine but it usually goes back into lockup mode when you press the Power switch again. I have not found a work-around, other than to set it aside for a few days and try again. Any suggestions? Is this a common problem?

**Miles Abernathy
Austin, TX**

I think that CARCOUNT.BA, published last month, is the answer to your troubles. What D.R. Rowland suggested is that you remove a key cap from your keyboard and connect the points through a relay. Each click of your relay acts like a key press.

Another possibility, if you don't like the idea of altering the keyboard, is to use the bar code port on the Tandy. Just watch the port for a bit change from zero to one.

Your problem with the power on sequence seems to be battery related. That is, every other time I've heard of this problem, it was a battery at fault. Are you using NiCds? Does a Cold-Start have any affect?

-tk

LOST FLOPPY.CO

In the November 90 issue (vol. 7, No. 6), I found what I thought would be the answer to a problem that has plagued me of late. After a cold reboot, I found I could not reload Ultrasoft Disk Power, so I reverted to using FLOPPY.CO. For rea-

Sardine: The only electronic dictionary for Model 100/102/200/NEC8201 computers. Contains the 33,000 word Random House Pocket Dictionary.

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ROM version includes both T-Word, the famous word processing program, Sardine, plus 7,000 of the most frequently used business words. Disk version works with the Ultimate ROM II or stand alone. All versions require a TPDD or TPDD2. Sardine ROM 49.95 or disk \$39.95 (add \$3)

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sons not clear to me, FLOPPY.CO ceased to function after I used TELCOM for some, don't know why, external communications. It seemed to me that Paul Globman's RUN.100 might just do the trick, since FLOPPY.CO was still resident in RAM.

However, when I entered RUN.BA the program did not execute FLOPPY.CO. In fact, FLOPPY.CO disappeared from the menu as a result of RUN.BA.

Globman notes that RUN.BA is similar to a previous program, KILL.BA. Just how similar are these programs, I wonder. Are they possibly identical?

In any case, please advise, if you have an idea what may be going wrong.

Bruce L. Brown
Bayside, NY 11361

First, you need to contact Ultrasoft about getting a replacement for your blown Disk Power program. Second, I'm not sure why you had a problem with TELCOM and FLOPPY.CO. The fact that FLOPPY.CO was corrupted might have made the difference in the way RUN.BA acted when you ran it. To the best of my knowledge, RUN.BA and KILL.BA are different programs.

-tk

AXONIX THINVIEW 25 WANTED!

I am in search of a AXONIX Thinview 25 LCD display. Axonix has discontinued the production line in 1985, and no units are available. I know you made a review on this product in Portable 100. Do you know someone who is ready to sell a used unit to me?

Guy-Paul Vauzelle
Quebec, P.Q. Canada

Well, readers, can anyone help?

-tk

WP-2 ENHANCEMENTS?

When is somebody going to come out with an enhancement for the poor excuse for a word processor the WP-2 has?

When I first got my WP-2 I had high hopes but they were soon dashed by simple inexcusable flaws. Such as no ability to save default margins or font (I know the work around of saving a dummy .DOC file but it is cumbersome). A very short list of available fonts, three.

Cryptic methods of doing hanging indents like having to redefine the line length are something the computer should be able to do. How about a usable page preview? The list goes on but these are my major points.

When I contacted Tandy about my gripes the reply was to the effect that this was the design and what was my problem?

All I am asking for is something like TWORD+ which I have used a lot on a NEC PC-8300 and enjoy. I believe the WP-2 has the potential to do this.

Wayne Kasacek
Norfolk, Ct

I am in search of a AXONIX Thinview 25 LCD display.

Sorry, but I doubt you'll see any improvements to that machine, either from Tandy or from third-party vendors. Unfortunately, the machine hasn't sold enough units to attract attention. Now days, a machine has to sell in the millions before program developers will take the time to write programs for it. That hasn't happened with the WP-2.

-tk

VINTAGE MODEL T'S

I have three vintage Model T's (Model 100's) that I have used furiously since 1986. Now I am furiously frustrated at my inability to find information about how to fix them as age has insinuated nagging little aches and pains in them. (I feel that way..., why shouldn't they?)

My oldest "child" suffers from case deterioration. The plastic is drying out and the brass screw receivers are falling out. Glue doesn't help: the plastic has completely disintegrated around the

DEFUSR

receiver posts

Clumsy, but effective, bolts go right through the face of the computer and hold it together. I am grateful for even this unattractive repair since it is the one machine that still functions reliably. (A miracle considering it probably has over 300,000,000 miles on it! The letters are coming off the keys!)

But I am not grateful for the inability to get reasonable service from Tandy. The outright cost of sending in the unit for a lookover and the quoted cost for a new case top was not worth it. The last time I ordered parts from Tandy, they were three months in coming! (And the time before that too!)

So I take Model T number one in lap and appeal for help or advice from anyone who can give it. I want to restore Model T's two and three before Alzheimers gets the best of their dormant memory chips.

Model T two quits on start-up. It powers up, shows it's little LCD face in full glory, the clock ticks about 20 seconds, then the display (and the keyboard) freezes. The chill is complete as it will not respond to a cold start either by RESET CTRL PAUSE or by CTRL PAUSE POWER SWITCH.

It responds to power off-then-on in different ways:

1. First time on (after sitting for over an hour) with batteries installed: the clock counts from about 20 to 55 seconds before freezing.

2. Next time on (after situation #1): Display is frozen on the previous clock freeze time.

3. If left off for about five minutes, the clock will act as in situation number one — or it will COLD START. I cannot see any rhyme or rhythm to it's decision to continue or cold start.

4. If turned off before the clock count quits, the clock will resume when turned back on.

5. If I leave the unit turned off with no batteries installed for a month, it will start up (as in situation #1) but only give about five or six seconds of time before freeze-up. As time passes with power in the batteries during power-off the number of seconds increases, although I have yet to see it go past about fifty-five seconds since the problem first developed.

Note: Each time the clock continues (not counting cold starts) it is starting with the correct sequential time . . . in other words, I don't believe it has stopped accessing memory to update itself during power offs.

Also Note: The results are the same with battery power or external power from a converter.

DEFUSR

Perhaps I inadvertently picked a feminine version of the computer and I have done something wrong and she won't tell me...

Anybody else run into this problem? Can anybody help?

Model T number three: Operates well on all fronts except: it won't access my Disk Drive (PDD-1) any more.

I first tried the PDD-1 and connecting cables with Old Faithful (Model T I) and determined that all was operational.

Then I tried *Ultimate Rom II's* Menu access to DOS100, direct access to the DOS100.CO file by CALL 57600 or CLEAR 256, 57000 (using TS-LOAD) and Disk Drive access to FLOPPY.CO using IPL (and remembering to switch the DIP's). All meet with a quick trip back to the standard Model T MENU (except for the UR-II access which simply flashes *Disk Error*). Cassette tape loads and saves come and go with impunity.

Please accept my aging Model T I's limping call for help for it's brothers (sisters?). It is the oldest, most frail, most mutilated, but most trusted of my stable to date. It's inevitable end is in sight. The others have much more to give as their maladies have rendered them useless to me in this last year or so. If Model T one could help precipitate the repair of it's siblings, it could face the day of it's own retirement with some honor and dignity.

Rocco Fortunato
Brackettville, TX

My first thought, because you have three machines, is to trade cases between number three and number one, giving number one an exterior face lift. Now you have one machine that works just fine, and looks good, too.

You might want to trade keyboards between units two and three.

Next, and this may sound silly, take apart your computers and clean the connectors between the various boards. Get a magnifying glass and examine the boards carefully for cracks or breaks in the copper circuits (especially around the connectors and other places where stress can bend the boards).

You might want to trade keyboards between units two and three. I did this with a set that I had and ended up with one functional unit instead of two crippled ones!

Does anyone else have any suggestions?

-tk

BLACK BOX REQUEST

Could any reader design a black box using Radio Shack parts to enable me to use my Model T as the moving display for my exercycle, duplicating (or improving on) the L.E.D. display used on the Bally Lifecycles? I want to be able to pedal exercise for 60 to 90 minutes consecutively, which the lifecycle can't do. Plus the lifecycle costs \$1600! which I can't afford.

David Walton
Ocean City, MD

Take a look at the February, 1992, issue's article CARCOUNT.BA. You might be able to adapt that to meet your needs.

Does anyone want to help David Walton?

-tk

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Draw, Pardner!

Deskmate's Draw program is simple, easy, and fun.

by Linda M. Tiernan

I am one of those people who, given a piece of blank paper and some crayons, can't think of a thing to draw. I don't know why. Give me lined paper, I'll think of something clever to write; give me a keyboard or some other means of making music, and even with my limited ability to carry a tune, I can wrestle a few notes out into the world. But art has always held a mystery and a fascination for me, because I have never learned how to do it properly. Like French, I understand most of it when I hear it spoken, but it's a far cry from fluency in the language.

Knowing this, I prepared to do a *DeskMate Draw* review, however timidly. I explored the program, found I needed some kind of instruction, and ran the *DeskMate* tutorial on *Draw*. I won't say it's intuitive, but a wonderful facet of the *Draw* program is that, as much as possible, it uses the exact same commands and concepts as the other *DeskMate* programs — so you don't end up trying to learn computerese and art at the same time, just art.

Like all the other *DeskMate* tutorials I have run, I feel that whoever put the tutorial together (*PLAY.PDM*) did a wonderful job. I went through the steps of drawing a castle, filling in the different sections with designs (brick for the walls, colors for the roof, etc.). I hung a pennant from a flagpole at the top. The manual for *Draw*, which came with my computer, is notably lacking on detail. This includes the fact that my *Draw* program looks different from what they have on their sample screens. Mine has an F7; theirs doesn't. It is apparent that my version is newer than the documentation, and the changes weren't considered important enough to reprint the manual.

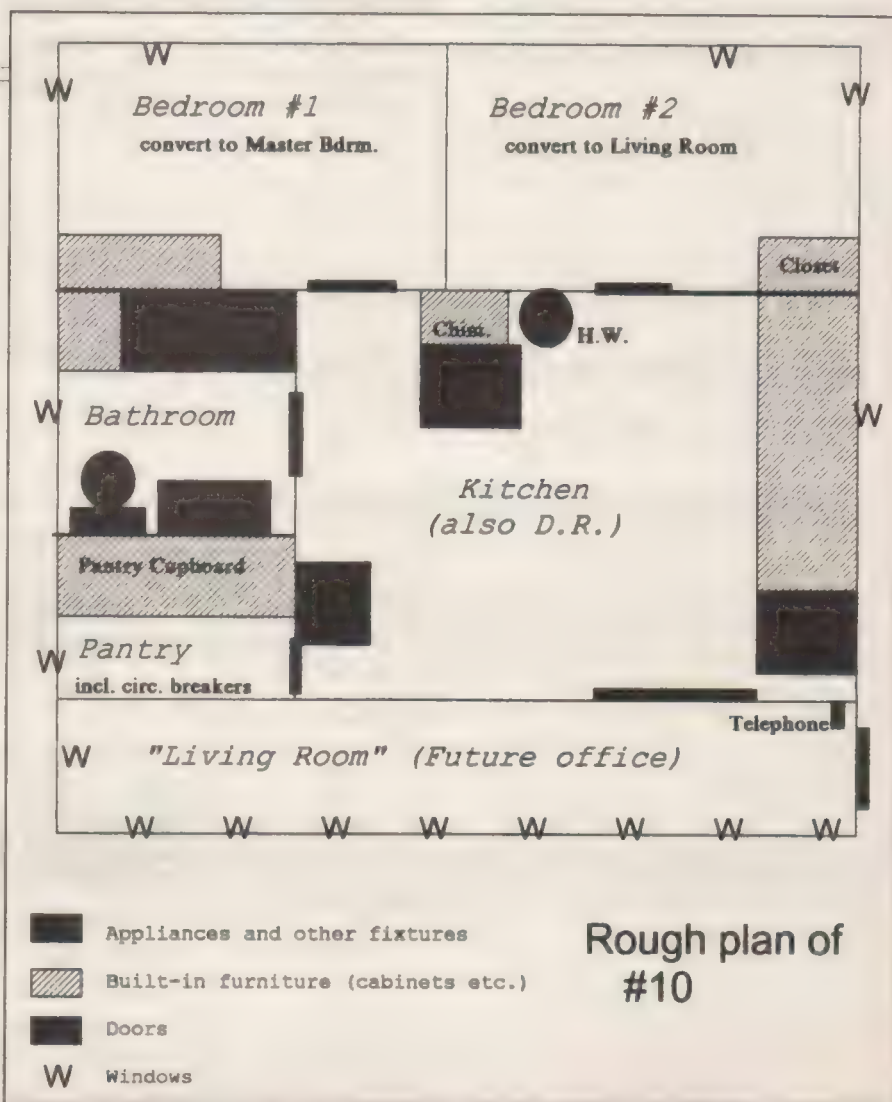


Figure 1. Floor plan, an example of shading and various type fonts. The type slows printing down immensely.

(Note: Those of you who have Michael Banks's wonderful book, *Getting the Most Out of DeskMate 3*, will also see

sample screens older than mine.)

Real artists have a knack for breaking any picture down into its components.

DESKMATE

They see spheres, cones, rectangles, triangles, and other basic shapes where we ordinary mortals see only a nice view. *Draw* consists of these component shapes, with patterning and shading, at your command. You must have only the eyes to see them, then ease them together into a design. Practice — and, I truly do think, an artist's eye (which many more people have than realize it)—transform your designs into honest-to-goodness art.

As I mentioned, the fundamentals of this *DeskMate* program are no different from the fundamentals of any *DeskMate* program. For cut/paste/move operations, the user highlights something by holding down the *Shift* key and using the arrows. *Shift-Page Up* and *Shift-Page Down* shoot you back and forth across the screen; *Home* and *End* take you to the top and bottom. The screen scrolls to accommodate the cursor (or you can lock up this function so the screen doesn't scroll). "Page Setup" determines the boundaries and size of the "canvas" you will be using. When you select a function from the top of the screen, you still *TAB* around to the place you want, pressing the space bar to push a "radio button" or to mark the box with an X. The *F2* button is file-related (open, save, print, etc.). The *F3* key edits your artwork (cut, paste, clear, select all). Anyone who has used *DeskMate's Text, Music, Sound, Worksheet, or Filer* will feel right at home with the basic computer commands.

From key *F3* on, the functions are art-specific (*F3* only a little different from *Edit* in other *DeskMate* programs). Function key *F4* (*Actions*) allows you to manipulate major portions of your picture — rotate it, flip it, make or break it. These are the sort of things you'd want to do with a greeting card, for instance, if you were going to print one on a single piece of paper and then fold it over twice. In order to have your pictures right-side-up when you're done folding, they must be laid out upside-down on opposite corners of your paper. This is different from *F3* (*Editing*), which is really more like: a line here, a point there.

Function key *F5* allows you to *Zoom*. I'm still exploring this. You can enlarge or reduce the size of your picture on the screen as you work on it. This allows you to add more detail, or to see an overview. I have not printed much from work I've done with this function, but it seems to me that no matter what you enlarge or reduce, it is the original picture that is printed. You don't get miniatures or enlargements.

The most interesting function keys are *F6* and *F7*. It is function key *F7* that

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Dixon 24 pt. outline 100% regular

Dixon 48 pt. outline 100%

Dixon 24 pt. outline 100% bold

Dixon 24 pt. outline 100% italic

Marin 24 pt. outline 100% regular

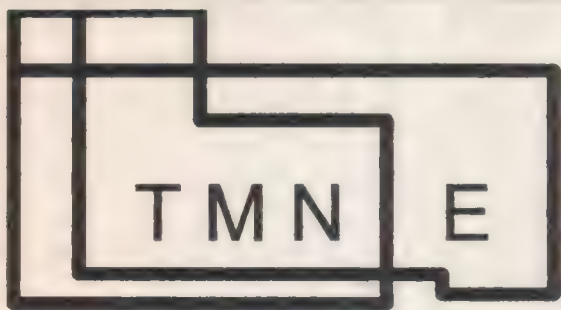
Marin 48 pt. outline 100%

Marin 24 pt. outline 100% bold

Marin 24 pt. outline 100% italic

"Printer" fonts are the regular computer typefaces--Courier, Prestige, etc.

Figure 2. A sample of the three main type fonts included with *Draw*. This sheet took over fifteen minutes to print. Forty-eight point size type is actually the size of the word *I* at the beginning of this review.



No problem too small

Figure 3. Brush/Filled Brush work. Because it is frechand, it takes longest to print—eight minutes for this simple design.

gets you started: It is the *Draw* Toolbox. From F7 you decide what shape you will draw, or whether it will be freehand (Brush) or Type. Once you have selected the tool to use, line up the cursor (a flashing cross-hair) where you want to start, press the space bar, and move the cursor to where you want to stop. You will see a "ghost" design along the way, growing and changing as you move the cursor around the screen. For example, to draw a rectangle, choose Rectangle from the F7 box. Find the spot you would like a corner to start, and press the space bar. Then move your cursor. Like a rubber-band cat's-cradle, you will see a box begin to stretch and grow from that point as you move the cross-hair farther down and across the screen. A second space-bar tap turns the rectangle into a solid figure. With an ellipse, one tap is the center and the second is the circumference. (Dredge up all your memories of geometry and "Loc" and use them now!)

Your geometrical shapes will be just lines on the screen unless you opt to use the F6 functions — Patterns, Colors, etc. Once you have selected a pattern or a color (or both), the second tap of the space bar on any geometrical construction will fill in the form with the pattern of your choice. On a color monitor, you can also choose color variations, but of course those won't be printed. Figure 1 shows a rough floor plan, where I used some of these variations in shading (inside rectangles and circles) to draw a house plan. Incidentally, it is also from the F6 menu that one chooses to use mouse or keyboard to do the drawing. (I do not use a mouse and don't intend to start.)

One of the F6/F7 options is Type. When you choose Type from F7, the cursor changes, from a cross-hair to a vertical bar with a small horizontal chip showing the base of the letter. From F6

you may choose the point size of type, three type fonts included with *Draw*, italic, bold, hollow, grayed, and plenty of other neat things. Figure 2 is a sample of the type styles and formats included in the basic *Draw* program.

However, a word of warning: this is not a word processor. It is not TEXT. Only people who have used a typesetting program such as *Pagemaker* understand the difference between word-processor

typing and Type as it is found in programs such as *Draw*. Simply put, when you do word-processing you are typing letters into words into a file; when you use Type and other art programs, you are creating a picture that looks like the letter a, the letter b, and so forth. A wise programmer once told me, "A picture is worth a thousand words and takes at least that much RAM, minimum." When you use Type in *Draw*, you are creating

When you use Type, you create pretty pictures that look like letters.

pretty pictures that look like letters. Generally, you are putting lots of these pretty pictures on one line. They cannot be spell-checked, and they take an eternity to print out on a piece of paper, because each one is a separate picture! My original Figure 1, without the written labels (which were all done in Type, not in TEXT), was printed in less than a minute. The version you see, with labels, took three minutes. The sample type-faces shown in Figure 2 took over fifteen minutes to print. And this was done on one of the latest Epson dot matrix-printers by an 80286 machine.

Brush/Filled Brush on the F7/F6 menus will look familiar to anyone who has handled a Wrico pen or cut a brush tip to fit. F6 shows a relatively good menu of brush points. You have only to

choose "Filled Brush" and go. This is free-hand drawing (whether by arrow key or mouse). As with Type, a picture is worth a thousand words, and takes nearly as long to print. The design in Figure 3 took exactly eight minutes to print. The sinuous Brush is fascinating, though, with a mind of its own, fun to watch on the screen and intriguing to play with, even if you aren't a professional artist (as I am not).

Last, but not least, on the Function selection is Clip Art, an F3 choice (one of the few features that makes F3 an oddity compared to correlating F3's in other *DeskMate* programs). *Draw* has six built-in pictures — hardly a bonanza — which you can copy "as is" into *Draw*. The six pictures are in a file called *DEFAULT.CLP*, which implies that, somewhere out there, other .CLP files are available with other pictures. The screen which allows you to select one of the pictures also has a "Load" key in case you have other picture files to choose from, and also a "Paste" function to allow file-to-file manipulation of the pictures. Once you have selected a picture for *Draw*, you can enlarge or reduce it, rotate or edit it, the same way you would manipulate a picture you drew yourself. Be sure that you have positioned your cursor where you want the picture to appear before you select the picture.

Draw is a traditionally-styled art program in *DeskMate* format, packaged according to Radio Shack tradition (bad documentation and good tutorials). It follows the *DeskMate* command pattern, and is as good a basic art program as any on the market. It won't teach you art; but it will make you look GOOD!



PRODUCT SPECIFICATIONS & SUPPLIERS

DRAW is part of the *DeskMate 3 Productivity Software* package.

DeskMate 3 Productivity Software — \$99.95

Catalog Number 25-1351 — Graphical user interface containing TEXT, DRAW, MUSIC, FILER, and more, plus tutorial programs. Available at all Tandy/Radio Shack stores.

Getting the Most Out of DeskMate 3, by Michael A. Banks
ISBN 0-13-202334-2. — \$19.95
Brady/Simon and Schuster, Publishers, c1989.

COMPATIBILITY: MS-DOS computers.

BAT-ting Your Way To Efficiency

The BAT keyboards let you type quickly and accurately with one hand. They're perfect for situations requiring one hand off the keyboard.

by Terry Kepner

The bane of the typist is trying to type with one hand while doing something else with the other. Such as inputting spreadsheets, transcribing copy, or working with a mouse. Especially working with a mouse. Now, there's a frustrating situation. Sometimes it is easier to use the mouse, other times it is faster, much faster, to type on the keyboard instead.

Anyone who is trying to use *Windows* or CAD/CAM programs knows that using a mouse to hunt down through three pull-down menus is much slower than typing the two-key combination that does the same thing. But, having to type with one hand is not easy on a standard QWERTY keyboard. If you have small hands, some key combinations are impossible with one hand (try *ALT SHIFT +*). Which means you must release the mouse and type with a finger from each hand. Not very efficient.

Or, if you are one of those who can actually touch-type, then it's worse. You can't type one-finger from each hand. First, you have to position your hands on the home-row, then type. When you have to type in lots of labels on a diagram, you're lucky to move at a snail's speed, what with all the switching between the keyboard and the mouse.

CORDING TO THE RESCUE

The BAT keyboards are based on a simple principle: you can press more than one key at a time with your hand. Any pianist will tell you so. It's called "cording."

And it looks scary. Most people see the simple seven-key keyboard and panic. They find a QWERTY keyboard imposing, and the sight of seven unmarked keys makes them turn and run. Or a typist will look and say, "It took me weeks to learn speed typing on QWERTY. I'm not going to repeat that."

What a mistake. The keyboard is so simple in concept and so easy to use, that the non typist can learn enough to proficiently type in only one hour, and to reach a fast speed in only a few more. Much better than he could do with a QWERTY keyboard. The touch-typist can pick up the system even faster.

THE BAT

The BAT system is really two separate keypads of seven keys, five white, one red, and one blue. Installation is simple and fast, just run the installation program on the distribution disk and plug the keyboards in place. As mentioned above, you can either use the parallel port or the serial, depending on which model you order.

The two keyboards are attached to the port and to each other with a simple phone-cord type cable with similar plug-in connectors. You don't have to use both units, but to use the left unit requires that both units be attached.

The BAT keyboards are sculpted to match the way your hand is most comfortable. They are angled a bit steeper than most keyboards, but the built-in palm rest makes all the difference. After several hours of hard work, your fingers are tired from the activity, but your hands are not fatigued. No carpal tunnel syndrome because your hands are in natural positions without the strenuous side to side motions that bring on such afflictions.

The five white keys provide all the cording combinations you need for the alphabet, see figure 1 for the BAT character chart. Don't let the chart scare you, it's simplicity itself. The five keys rank thumb at the top, index finger next, middle finger, ring finger, then little finger. Thus, according to the chart, to type the letter "a", press down with your thumb, index finger, middle finger, and

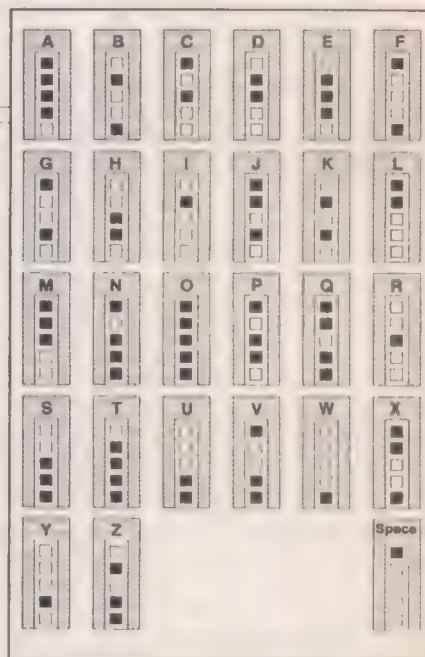


Figure 1. The basic set of BAT key cords.

ring finger. The letter "b" requires pressing with your index finger and little finger. Space bar is simply a thumb press.

The blue key is used as the *Shift* key. Press it once, and the next letter you type is a capital. Press it twice to lock capitals. Press it again to return to unshifted characters.

Pressing the blue key while pressing one or more of the white keys provides special characters like the comma, period, apostrophe, backspace, and so forth. The arrow keys are also tied to the blue key. See figure 2. Function keys one through twelve are accessed by pressing the blue thumb key, the index key, and the ring finger key followed by the appropriate number from the red shift set.

The red key ties you into the numbers, *ALT*, *CTRL*, and other special functions, see figure 3. Most important among these other special functions is macros. That's right, you can assign special meanings and phrases to special key combinations and quickly retrieve them.

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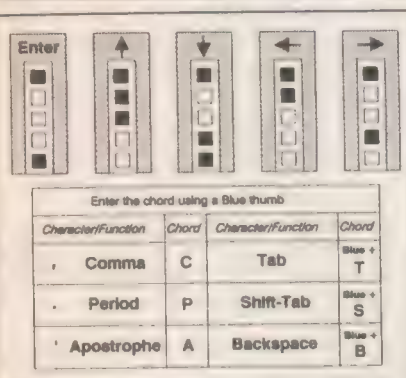


Figure 2. Some of the special characters available in combination with the blue key.

Thus, you could assign the phrase "Very truly yours," to the "i" macro key and call it forth by pressing the red thumb key and ring finger key followed by the cord for the letter "i", the index finger key.

The keyboards can be used separately or together. If you use only one hand, you are limited to a top speed of around thirty-five to forty words per minute. If you decide to use them both at the same time, you can get up to eighty words per minute by alternating keystrokes between your hands. This is weird, at first, but you quickly adapt. The true beauty is that no matter whether you are left or right handed, after only a little effort, you can type with both hands equally well.

CUSTOMIZATION

To make it easier for you to learn and use the system, you can have the BAT software display a keyboard status display. the status display tells you when you have CAPS, symbols, function, or macro keys enabled. Very useful when you are beginning the system. It even manages to work in Windows!

ROMBO

At last! An economical adapter that allows you to use stock EPROMs (27C256) in the option ROM socket in the Tandy models 100/102/200. They're reuseable too, no soldering necessary. Remove an EPROM in seconds, reprogram, and reinstall in the same ROMBO. "The best!"

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You can also have the system install its online help file (requires 7K of RAM), the BAT tutorial (98K, only when used), and the BAT macro editor (60K, also only when used). The system software, by itself, uses just 28K of RAM.

Additionally, the entire BAT keyboard assignment system can be redefined to your convenience. All you need

Enter the chord for the letter AND a Red thumb			
Character/Function	Chord	Character/Function	Chord
Alt	Red + T	End	Red + E
Control (Ctrl)	Red + K(r)	Escape (Esc)	Red + S(r)
Delete (Del)	Red + W(r)	Insert (Ins)	Red + B
Home	Red + H	Print Screen	Red + Z
Page Up	Red + U	Page Down	Red + D
Scroll Lock	Red + R(r)		

Figure 3. These special keys are accessed by pressing the red key and the cord for the appropriate letter. Not shown are the special cords for the numbers zero to nine and the related characters (+, -, *, %, #, =, etc.).

is a word processor. So, if you don't like that the letter "a" requires pressing the thumb, index, middle, and ring finger keys, you can change it to just the index finger. Or anything else. I've redesigned the keyboard to exactly match the key assignments of the mini-BAT.

Customizing the key assignments is not complicated, but the numbering system used is odd. For flexibility, they designed the system to use octal (base eight), decimal (base ten), and hexadecimal (base sixteen) counting systems. Rather unexpectedly, the system actually used is in octal. For anyone wanting to make changes, it takes a little thought

HARDWARE REVIEW

to realize that although the list is running 01, 02, 03, . . ., the 010 is actually eight in octal. With this understanding, though, it quickly becomes easy to use.

THE MANUAL

The manual, while it does explain in full all the features, is not complete. It needs an index so you can quickly find answers, and it needs a complete listing of the definition table used by the BAT, with an explanation of the special symbols used. This would make it much easier for the lay person to see what was happening and to look up unusual key combinations, especially when you want to assign a few new codes for your requirements and want to know what's not assigned.

The manual, by the way, is a seven by nine spiral-bound booklet of seventy pages.

IN SUMMARY

Any time you need to work with one hand while typing with the other, the BAT is the perfect remedy. The keyboards, while bulky, are light, weighing less than one pound each. They work equally well through the parallel port or the RS-232 port.

Their light weight makes them perfect for in-the-field applications where large amounts of data must be entered essentially one-handed (an accountant at the office of a client, entering figures and comments; transcribing data where you have to follow the information with one hand while typing with the other; and any graphics work where keyboard controls can speed up your work).

As a bonus, should you be so unlucky as to injure one hand or the other, you can still accurately type with the BAT system, something that is next to impossible with the QWERTY keyboard.

PRODUCT SPECIFICATIONS & SUPPLIERS

BAT — \$495.00

Alternative one-handed keyboards. Requires 256K RAM; MS-DOS 3.1 or later; COM1; COM2; or LPT1; ports; and an IBM PC/XT/AT compatible computer.

Infogrip Inc.
 5800 Perkins Place 5-F
 Baton Rouge, LA 70802
 (504) 766-8082
 (504) 336-0063

COMPATIBILITY: Model 100, 102, 200 and MS-DOS with changes.

METER.BA: An Electronic Timesheet

Let your Model 100 watch the clock for you.

by Walter Perry

Come what may, time and the hour
run through the roughest day
—Macbeth

"Time is money," goes the old adage. While this equation is one-dimensional, it does contain a kernel of truth. Those of us who charge by the hour are painfully aware that to the extent we lose track of time we also lose money. Consultants, attorneys, mechanics, and many others need to know precisely how much time is spent on a project. Otherwise we cannot fairly and accurately bill for the job.

The timesheet is, of course, the simplest device for keeping track of time. The *METER.BA* program (Listing 1) is designed to generate an accurate and legible timesheet with the minimum effort.

TIMEKEEPING PROBLEMS

I am an attorney. I wrote this program to deal with two timekeeping problems that I have experienced with manual timesheets. The first is that it is difficult to keep track of the amount of time I spend on a task when work is interrupted by phone calls, office visits, or brilliant ideas on other projects. So I need a system that can keep track of each "chunk" of time spent on each task separately, and then at the end of the day sort them by task and add them up.

Doing this by hand requires remembering when I start a project, note when I stop, figure out how many minutes it took, add that chunk to other chunks, and finally, convert the totals to tenths of an hour. Each step takes time away from other more productive work. It also provides opportunities for arithmetic mistakes.

Second is the problem of communicating to the client. For some reason, clients like to know what they are paying their hard earned money for. Unfortunately,

my handwriting is atrocious.

Before using this program, I used to fill out hand-written timesheets describing the work I had done. Of course, the bookkeeper can only read half of what I write. As a result, either I waste more time talking to the bookkeeper or the client gets a bill for 1.3 hours with the notation: "Meat wit Jorse to discurs conduct." This type of report does not improve relations with clients!

METER.BA
generates an
accurate, legible
timesheet with a
minimum effort.

Thanks to the *METER.BA* I now produce a legible, accurate reports and I can prepare them in much less time.

HOW TO USE METER.BA

When the program starts, you are given a blank "page" to fill out. The page is for one timesheet entry (all the time you want to charge under one task or job). You may want two or more entries for one customer if you do different tasks

during the day. The page contains the basic timesheet information (name, date, file, description of work, and amount of time spent).

TIME DEFAULTS

To make filling out the entries faster and less tedious, two default values are built into the program. The date is set at the current date, and the beginning time is set at the current time. Since these are the only default values, they may be changed.

A menu of options appears at the bottom half of the screen. There are sixteen menu options on two separate menus. Press 4 (TIME) for the second menu and 18 (GOBACK) to return to the main menu. You may select any number regardless of which menu is displayed.

One of the most useful features of the program is its ability to act as a "meter." When you start a task, the beginning time will be set automatically. (You can set it manually using *BEGIN TIME 11.*) Just fill in the file and description entries and go to work. You can leave the meter ticking away—not recommended unless the Tandy is plugged in.

Or you can *EXIT (8)* the program and use the Model 100 to write a letter or work on a spreadsheet. When you *EXIT*, the meter creates a .DO file called *TIME.DO*, which records all the entries made so far. **DO NOT EXIT BY A CTRL-BREAK BECAUSE YOU WILL LOSE THE INFORMATION YOU RECORDED!**

When you are ready to use the program again run *METER.BA* and the information is loaded in.

When the job is done either enter *END NOW (7)* or *NEXT (1)* and the end time will be automatically set at the current time. The total time for that page is



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0'THE METER (C)1989 Walter Perry: LastUp
date 4/10/89: The author grants permissi
on to distribute THE METER if line 0 is
included. If you find the program useful
send \$20 for complete information to Wa
lter Perry 1610 Winter Street S.E. Salem
Or 97302.

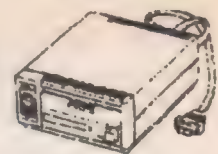
```
10MAXFILES=1: CLEAR2000: DIMCOS(20): DIMCN$
(20): DIMBH(20): DIMBM(20): DIMEH(20): DIMEM
(20): DIMTT(20): DIMAMS(20): DIMPMS(20)
20N=1:P=1:CLS=STRING$(119,32):BH(1)=VAL(
LEFT$(TIME$,2)):BM(1)=VAL(MID$(TIME$,4,2
)):MO=VAL(LEFT$(DATE$,2)):DA=VAL(MID$(DA
TE$,4,2)):YR=VAL(RIGHT$(DATE$,2)):NOS=CH
R$(27)+"α":RO$=CHR$(27)+"p"
30NA$="YOUR NAME"
40CLS:PRINT@90,"LOADING THE METER...";:O
NERRORGOTO60:OPEN"TIME.DO"FORINPUTAS1:IN
PUT#1,N,NA$,MO,DA,YR,GT:FORA=1TON:INPUT#
1,BH(A),BM(A),AM$(A),EH(A),EM(A),PM$(A),
TT(A),CN$(A),CO$(A)
50NEXTA:CLOSE:P=N:GOSUB480:GOTO90
60IFERR=52GOTO80
70PRINT"ERR=";ERR;"ERL=";ERL
80CLS:GOSUB330:GOSUB480
90PRINT@200," 1 NEXT PAGE 2 FILE 3 DE
SCRIPTION ";:PRINT@240," 4 TIME MENU
5 PICK PAGE 6 ERASE ";:PRINT@280,"
7 STOP METER 8 EXIT 9 PRINT 10 NAME ";
100PRINT@275,"";:INPUT"";I$:I=VAL(I$):IF
I>0ANDI<18THEN:A=VAL(LEFT$(TIME$,2)):B=V
```

```
AL(MID$(TIME$,4,2)):ONIGOSUB120,140,160,
190,370,400,250,420,430,470,200,220,230,
250,260,270,290,90:GOTO90
110PRINT@200,CL$;:PRINT@200," PLEASE PIC
K A NUMBER BETWEEN 1 AND 18";:PRINT@240
,"";:INPUT"PRESS ANY KEY TO RETURN";A$:G
OTO90
120P=N:IFEH(P)>0GOTO130ELSEEH(P)=A:EM(P)
=B:GOSUB350:GOSUB300:IFBH(P)>0ORTT(P)>0G
OTO130ELSEBH(P)=A:BM(P)=B:GOSUB330:GOSUB
300
130N=N+1:P=N:BH(P)=A:BM(P)=B:EH=0:GOSUB3
30:GOSUB480:RETURN
140PRINT@200,CL$;:PRINT@200,"FILE NAME O
R NUMBER (20 CHAR) ";:INPUTCN$(P):PRINT@5
9,STRING$(19,32):PRINT@59,CN$(P):PRINT@2
00,CL$;:IFN>1THENFORS=1TO(N-1):IFCN$(P)=
CN$(S)ANDP<>SGOTO150ELSENEXTS:RETURNELSE
RETURN
150PRINT@200,CL$;:PRINT@200,"TIME ALREAD
Y CHARGED TO FILE";:PRINT@240," ADD TIME
TO PAGE #";S:INPUT"(Y/N) ";A$:IFA$="Y"
ORA$="Y"THENP=S:N=N-1:GOSUB480:GOSUB270:
RETURN:ELSERETURN
160PRINT@200,CL$;:PRINT@160,"";:LINEINPU
T"DESCRIPTION (55 CHAR)";CO$(P)
170IFLEN(CO$(P))<55THENPRINT@131,"";:PRIN
TSTRING$(59,32):PRINT@131,CO$(P):RETURN
180PRINT@160,CL$;:PRINT@160,"";:LINEINPU
T"DESCRIPTION TOO LONG, TRY AGAIN";CO$(P
):GOTO170
```

Listing 1. METER.BA. This program keeps track of your time for you, so you can keep accurate records and please your clients.



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```

190PRINT@200," 11 BEGIN TIME 12 BEGIN NO
W 13 END TIME ";:PRINT@240," 14 END NOW
15 TOTAL TIME ";:PRINT@280,
" 16 ADD TIME 17 CHANGE DATE 18 GOBACK "
;:GOTO100
200PRINT@200,CL$;:PRINT@200," ";:INPUT"B
EGIN HOUR,BEGIN MINUTE,(A)M OR (P)M: ";B
H(P),BM(P),AM$(P):IFAM$(P)="P"THENBH=BH(
P)+12:ELSEBH=BH(P)
210GOSUB340:GOSUB300:RETURN
220BH(P)=A:BM(P)=B:GOSUB330:RETURN
230PRINT@200,CL$;:PRINT@200,"";:INPUT"EN
D HOUR , END MINUTES, (A)M OR (P)M : ";E
H(P),EM(P),PM$(P):IFPM$(P)="P"THENEH=EH(
P)+12:ELSEEH=EH(P)
240GOSUB360:GOSUB300:RETURN
250EH(P)=A:EM(P)=B:GOSUB350:GOSUB300:RE
TURN
260PRINT@200,CL$;:PRINT@200,"":INPUT" To
tal Time";TT(P):PRINT@111,USING"##.##";TT
(P):GOSUB320:EH(P)=A:EM(P)=B:GOSUB350:RE
TURN
270PRINT@200,CL$;:PRINT@240," ";:INPUT"A
DD TIME TO THIS FILE? Y/N ";A$:IFAS<>"Y"
ANDAS<>"Y"THENRETURN
280NH=A:NM=B:NT=(60*NH+NM):TT=TT(P)*60:B
T=NT-TT:BH(P)=INT(BT/60):BM(P)=BT-(BH(P)
*60):GOSUB330:EH(P)=0:EM(P)=0:GOSUB350:R
ETURN
290PRINT@200,CL$;:PRINT@200,"";:INPUT"MO
NTH, DAY, YEAR: "; MO,DA,YR: PRINT@46, US
ING "##/##/##";MO, DA, YR: RETURN
300TT(P)=(INT(10*((60*(EH-BH))+EM(
P)-BM(P))/60+0.05))/10: IF TT(P)<0
THENTT(P)=0
310PRINT@111,"":PRINT @111, USING "##.##
"; TT(P):GOSUB320: RETURN
320GT=0:FOR X=0 TO N: GT=GT+TT(X+1): NEX
TX: PRINT @116,USING "##.##";GT: RETURN
330BH=BH(P): IF BH(P)=0 THENAM$(P)="ELS
EIF BH(P)>12 THENBH(P)=BH(P)-12:AM$(P)="
P":ELSEAM$(P)="A"
340PRINT@87,USING"##.##\\";BH(P);BM(P);A
M$(P): RETURN
350EH=EH(P):IF EH(P)=0 THENPM$(P)=" ELS
EIF EH(P)>12 THENEH(P)=EH(P)-12:PM$(P)="
P":ELSEPM$(P)="A"
360PRINT@98,USING"##.##\\";EH(P);EM(P);P
M$(P): RETURN
370PRINT @200,CL$;
380PRINT @240,"";: INPUT "SELECT THE NUM
BER OF THE PAGE": R: IF R>N THENPRINT @
280,"ONLY";N: "PAGES EXIST, PLEASE PICK
AGAIN";: GOTO380
390P=R: GOSUB480: RETURN
400PRINT@200,CL$;: PRINT@200,"ERASE ALL
VALUES ON ALL PAGES (Y/N)";:INPUT A$:IF
A$<>"Y" AND A$<>"y" THENGOTO410:ELSECLEA
R: KILL"TIME.DO": GOTO10
410PRINT @240,"";:INPUT"ERASE VALUES FOR
THIS PAGE (Y/N)";A$:IF A$="Y" OR A$="y"
THENBH(P)=A:BM(P)=B:EH(P)=0:EM(P)=0:TT(
P)=0:CN$(P)="" :CO$(P)="" :GOSUB330: GOSUB
480:RETURN:ELSERETURN
420CLOSE: OPEN "TIME.DO" FOR OUTPUT AS 1
:PRINT#1, N,"",NA$,"",MO,"",DA,"",YR
,"",GT: FOR X=1 TO N :PRINT#1,BH(X),"",
BM(X),"",AM$(X),"",EH(X),"",EM(X),"",

```

```

";PM$(X),"",TT(X),"",CN$(X),"",CO$(X)
: NEXT X :MENU
430LPRINT:LPRINT: LPRINT"";NA$;: LPRINT
USING "##/##/##"; MO,DA,YR: LPRINT:LPRIN
T: LPRINT STRING$(80,"-"):LPRINT
440LPRINT " FILE NUMBER TIME DE
SCRIPTION": LPRINT " "
- - - - - :LPRINT: LPRIN
T
450FOR A=1 TO N: LPRINT USING " \
\ ##.## " ;CN$(A);TT(A);: LPRIN
T CO$(A): LPRINT: TT=TT+ TT(A) :NEXT A
460LPRINT STRING$(80,"-"): LPRINT:LPRINT
USING " TOTAL TIME ##.##"; TT: TT=
0: LPRINT:LPRINT: RETURN
470PRINT @200,CL$;: PRINT@200,"NAME":IN
PUT NA$: PRINT @16, STRING$(19,32);:PRIN
T@16,NA$ : RETURN
480PRINT@0, CL$;: PRINT RO$:PRINT@0,"#":
PRINT @ 10 , "NAME":PRINT @40,"DATE":PRI
NT @ 55, "FILE":PRINT @80,"BEGIN":PRINT
@ 94,"END":PRINT @105,"TOTALS":PRINT @12
0,"DESCRIPTION"
490PRINTNO$:PRINT@3,P:PRINT@16,NA$:PRINT
@116,"":PRINT@116,USING"##.##";GT:PRINT@4
6,USING "##/##/##";MO,DA,YR:PRINT @59,ST
RING$(19,32);
500PRINT@59,CN$(P):PRINT @87,"":GOSUB340
:PRINT @99,"": GOSUB360
510PRINT @111,"": PRINT@ 111,USING"##.##
";TT(P):PRINT @131,STRING$(55,32): PRINT
@131, CO$(P): RETURN

```

End of listing.

calculated and displayed. A running total of all the time in all pages is also displayed.

If you forget to turn the meter on or off at the appropriate time, that's no problem. Both the *BEGIN TIME* (11) and the *END TIME* (13) may be set manually. (Use the format 12,30,P for 12:30 P.M.). So if you are ten minutes into a task before you remember to turn on the meter, just set the begin time for ten minutes ago. If you forget to turn it on at all, you can directly enter the *TOTAL TIME* (15), without bothering with beginning or end time.

PICK PAGE OPTION

The *PICK PAGE* (5) option allows you to choose a page for editing. The selected page will be displayed; then any item may be changed. You may even *ERASE* (6) all of the entries and start over. If the beginning time or end time is changed, the total time and the running total are automatically changed also.

TIME OPTION

One particularly useful feature is the *TIME* (16) feature. It allows you to go back to an earlier page and add time to that page. This is handy when you have billed some time to a task and were interrupted, and now you are ready to get back to it. The beginning time is reset so that new time spent on this task is added to the total time for this page.

PRINT OPTION

When all of the day's tasks are recorded, you are now ready to *PRINT* (9) your timesheet. The printed timesheet is headed with your name and the date. Below that is a list of the files that you worked on that day. Next to each file is a description of the task performed and the time spent on that task. At the bottom is a total time billed for the day.

Each time you run the program, the information that was saved will be loaded. If you want to start a new timesheet, you may *ERASE* (6) the previous timesheet. This erases all the values in *TIME.DO* and sets the date and time at the current values.

HOW THE PROGRAM WORKS

The program has a very simple structure. A small main routine (lines 90-110) with a series of subroutines are controlled from the main routine.

There are two menus: the main menu and the time menu. All subroutines can be run from either menu. If you want to modify one of the subroutines, you can easily locate the subroutine through line 100. For instance, if you want to change

the *PRINT* (9) subroutine, go to the ninth line number listed after the *ONGOSUB* (e.g., 430).

The information entered (name, file, end time, etc.) is stored in arrays—*NA\$(X)*, *FN\$(X)*, *ET(X)*, etc. When the you *EXIT* (8) the program (line 420), the values are saved to a data file named *TIME.DO*. When the program is run, the values are loaded into the arrays (line 40).

MODIFICATIONS

You will probably want to change parts of the program so it will be more useful to you. This version of the program is a simplified version of the one I use at work. It was designed to have only the essential features that most people would want.

The program structure is in a modular form to allow each user to modify, add, or eliminate subroutines without affecting the rest of the program. There is

Some offices have a minimum time for billable hours.

one caveat—if you add or change variables you have to make the appropriate changes in the routines that save to (line 420) and load from (line 40) *TIME.DO*.

Every office has a different format for its timesheet. To make the output look the way you want, fiddle around with lines 430-460.

You may want to add or delete items from the timesheet. For instance, in my office we also have a "work code" for each entry. So in the version of *METER* that I use, one more subroutine allows me to enter the work code. This change requires another array variable—*WC\$(X)*—in the program.

The variable for a work code must also then be added to the other variables in lines 40 and 420 so it will be saved to and loaded from *TIME.DO*. Finally, the display (lines 480-510) and the printout (lines 430-470) will also have to be

changed so that the new item is displayed.

Another change you may wish to make is to have longer descriptions. I chose 55 characters in order to have everything fit on one line when it is printed. This sometimes limits the description to a somewhat cryptic statements. If you want to allow yourself additional space, just change the 55 in line 170. Note, however, that you are limited to 255 characters because that is all that a string variable will hold.

Some offices have a minimum time for billable hours. Thus, regardless of how long a short phone call takes, it is assumed to take 0.1 or 0.2 hours because of the disruptive effect it has on other work. The program can be modified to accommodate such a policy by adding the following to line 300: *ELSE IF TT(P)=>0 AND TT(P)<X THEN TT(P)=X* (where X is your minimum billing unit).

TRAVELING TIME

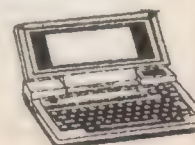
One drawback of the program is that it cannot handle more than one day's worth of activities. The program was designed for someone who can print a timesheet at the end of each day. However, if you are traveling, you may not have a printer handy.

There are at least two ways to deal with this. One way would be to make *METER.BA* output to a different file each day. The name of the file could incorporate the date, for instance, *T0421.DO* for April 21. The input would also have to be changed to allow input from a file other than *TIME.DO*.

Another solution that does not require a modification to the program would be to manually change the names of the *TIME.DO* files. At the end of day one, when all the day's activities have been recorded, change the name of *TIME.DO* to *TM1.DO*. Then on day two, the program will not find a *TIME.DO*, and it will create a new *TIME.DO* to hold the information for day two. When you return, you can then change the name of *TM1.DO* back to *TIME.DO* and print it. Then do the same for each *TM* file.

CONCLUSION

I hope this program can help you capture and account for some of those hours that were previously lost. Now, if only someone would devise a solution to the collections problem!



COMPATIBILITY: All computers.

They Pay Me to Do This?

If you enjoy your job, you never work a day in your life.

by Jake Commander

One of the most notable and enjoyable benefits the Model 100 gives me is working at home. As someone that's endured the rigors of nine-to-five existence in both factory and office, I appreciate this freedom more than any other.

But it's not all clover. For those of you thinking of taking your Model 100 and earning a living with it from your abode, I offer these observations.

First, let me assure you that it's possible. Just as a typewriter provides bread and butter for a writer, the Model 100 can do the same for either a writer or a programmer.

Even if the target machine's BASIC dialect differs from the 100's, you can write, test, and debug most algorithms on the 100 and transfer it. Using CompuServe, it's even possible to write in languages other than BASIC (although your overhead is likely to increase).

CREATIVE FREEDOM

The freedom of creativity is one of the luxuries I relish most. I suffer no distractions. No pressures from colleagues to alter my schedule or hop from one project to another. No management politics or pandering to the boss. My boss is me and if I'm lackadaisical, my conscience badgers me till I knuckle down.

My hours can be determined by personal requirements rather than deferring to Mr. Average's schedule of nine to five.

Obviously, for survival's sake, I have to overlap some with normal working hours. There's no use delivering a manuscript to the post office at 11 o'clock at night. Nor is it useful sending material via modem if no-one is there to receive it.

This freedom can create problems, though. Sometimes a project (especially a typical programming one) can go on until three or four in the morning for weeks at a time. This plays havoc with any kind of discipline I'm adhering to.

Thus the problem of time manage-

ment rears its ugly head. You err on the side of work and suddenly you're a workaholic. I'm no fan of work for work's sake, but I've found this happening to me simply because working from home has become such an enjoyable pastime.

SELF-DISCIPLINE

Considerable self-discipline has to be applied. Otherwise, the fridge empties, the garbage builds up, you forget friends' names, and you realize you've become a single-track automaton with one aim in life—to finish that last project.

More times than I care to admit, I've had to abandon a project within 80 or 90

The phone has an incredible knack of ringing just as you get up to speed.

percent of its completion merely to regain my sanity and return some balance to my existence.

To be fair, this rarely happens in writing for magazines, but it happens often when I program; it devours time and leaves me wondering what happened to the daylight.

You should also be aware of (as in any business) administration. This includes researching markets, acquiring work, and chasing payments. Someone has to do all this, and if it's you, then your productivity is compromised—espe-

cially if you have to keep answering the telephone.

GNAWING CURIOSITY

Ignore the phone and you may be throwing away work. Ignore it and you're leaving yourself with an insatiable curiosity. (Later, when you give in to the ringing beast, a pricked conscience will prompt you to cover your trail with white lies.)

The phone has an incredible knack of ringing just as you get up to speed. I can almost guarantee this scenario: I open a text file, write a paragraph, feel another three or four ready to pour into the keyboard, start the second . . . and of course the phone leaps out of its cradle.

Naturally it's important; naturally the conversation continues for half an hour; and naturally my three or four paragraphs disappear back to where they came from. Amusingly, while writing this piece, I had the curious experience of explaining to a caller that he'd interrupted me writing a paragraph about being interrupted by phone calls.

SOLUTION

My only successful solution to this problem has been to have someone else deal with the phone, the bills, and the correspondence, in short, the administration. In conjunction with enforced breaks, my own work schedule has become entirely reasonable.

On the positive side of the coin, when you finish a project and have no anxieties about what the next one is, you may be free to take a four-day weekend (although the temptation may still be there to spend the time curled up with a book researching the next project—in other words, working).

Well, despite the niggles, it beats working for a living. As a truck-driving philosopher once explained to me, "If you enjoy your job, you never do a day's work in your life."



COMPATIBILITY: All computers.

Why Do You Go to the Office Every Day?

Become more competitive in the information technology age.

by Ken Jarvis

A collaboration between Ken Jarvis and Jack Balde, this new column, **TELECOMMUTING**, will offer insights, tips, and help in using various online services like CompuServe, AT&T Mail, and others.—Eds.

My office, in a spare bedroom of my home, may not look like the nerve center of a global business, but it is. My commute is, literally, from my kitchen to my spare bedroom. How did I accomplish this? More importantly... how can you?

Every day you sit in a metallic monster (your car) spewing noxious gases into the air you breathe. Becoming more and more short tempered. Making a nervous wreck of yourself before you even get to work (or home in the afternoon). But you could be slaving (productively) over a hot keyboard all day.

Worse, increasing gasoline prices make commuting more and more expensive.

GLOBAL CHANGE

Change is afoot. Our workplace has become global; we are working in new places, with people from new cultures, for new companies. Our world has become smaller as we have embraced the changes with which we are confronted. And we are meeting the challenges these new relationships present.

What is driving this change and how are some of us able to respond?

Worldwide, every industry, company, and job is being affected by information technology. Chips, microproces-

sors, computers, and telecommunications are changing everyone's way of life, at work and at home. These technological advances have linked this new world together.

AT&T Electronic Mail, and my facsimile (fax) machine let me access the world. Like tens of thousands of others, my home is my office. From it I communicate with anyone in the world. Research comes in and copy goes out.

A simple telephone line allows this information and research transfer—to

There is *never* a busy signal, never telephone tag.

Asia, Europe, South America, the Middle East, and all parts of the United States.

E-MAIL

Electronic Mail is the *perfect* way to communicate. It is available 24 hours a day, 7 days a week. There is *never* a busy signal, never telephone tag. I never listen to those voices on the phone requiring me to press an extension number. I know that there is *no* extension number to dial, and I won't have to call back and listen to the entire message again.

I like for people to send me e-mail

messages. That way the information is in my computer. As we work toward the electronic desk, why have the fax machine spewing out reams of paper?

What does a person do with a faxed price? Retype it. If it comes in on e-mail, it is *already* in my computer. A little editing and it is ready to forward to other customers.

IT ONLY MAKES SENSE

More than ten years ago I met a consultant who had big ideas about working at home. He convinced me. He had surveyed a high rise building and learned that most of the people in that building came to work and sat down at a computer and telephone. His idea was to have workers stay at home and save time, gas, and money. I was convinced; his office was at home in Los Angeles, his secretary was in San Francisco. His company was in Dallas. He truly practiced what he preached.

AT&T Mail is the great equalizer in the Information Technology Revolution. It allows small companies access to information traditionally reserved for a select number of "big businesses."

My AT&T Mail and modem are the same as giant corporations use. Mine works just as well as those used by General Motors or *The Wall Street Journal*. Technology has given the individual and small companies incredible power. The world has been opened for us.

I see more people go broke because they think they need a big office with a conference room. They start out too big,

TELECOMMUTING

and they fail. The really smart ones have an office at home. They are the ones who pay me promptly.

A high back chair does not a successful office make. Once a business instructor tried to convince us that we did not need to give raises. All that had to be done was to put a larger picture on the wall, give employees a new chair with a higher back or their name on their parking place. I believe that some of us would rather see larger numbers on the check. For some reason we did not get along, that instructor and I.

At last, the electronic cottage industry is a reality. It is no longer a vague concept. Suddenly, there is this guy (me) walking around in his shorts, communicating with the world, competing and succeeding in his profession.

THE WIZARDRY OF CHANGE

Change comes down to the distillation of information:

Using AT&T Mail solidifies relationships.

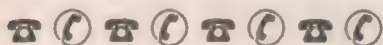
- How fast you can collect it
- How intelligently you can package it
- How cleverly you can link yourself to other members of your growing business family of suppliers, inventive subcontractors, distributors, and customers.

Sometimes it is megabytes of orders and invoices; sometimes it is the wizardry of customers and producers working together.

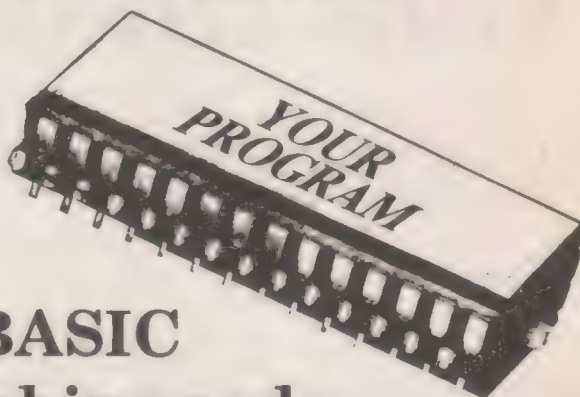
Using AT&T Mail solidifies relationships. It puts me in a favorable competitive position, and we all need that.

Telecommuting is becoming a larger part of the future of American business. It is time for all of us to jump on the bandwagon.

Ken invites people to contact him by calling (800)473-0509, via AT&T Mail (!kenjarvis), fax (702)454-0509, Telex (6504680923), or by mail at 6420 East Tropicana Avenue, #105, Las Vegas, NV 89122.



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COMPATIBILITY: Tandy 100, 102, 200.

Better Letterheads, Part Two

Calculus, schmalculus! Dead reckoning will do!

by Mike Nugent

When we last left Gary Girth, hypothetical president of the hypothetical Wide Load, Inc., he was unconscious. Since I'm on a tight deadline, and he tends to slow down my writing, let's not revive him just yet. While "Rip Van Girth" continues to slumber, we'll continue to solve his problems.

A REMARK ABOUT REMARKS

Before we dig in, take a look at Figure 1. It's last month's Figure 2 with some remarks added. Did you know you could do that—add remarks to remind you of what you're doing? Though it isn't mentioned in the manual, I've found that *Write ROM* completely ignores anything following a dot command (on the same line only). Try appending some remarks to your own dot commands. They don't show on the Map screen, and they have no effect when you print the file. They seem completely "invisible" to *Write ROM*!

Now back to our regularly scheduled column ...

THOSE BLANKETY-BLANK LINES!

Last month we adjusted *Write ROM*'s margins in order to center double-wide text (the company name) in the letterhead. The method was simple and effective.

It did, however, produce a blank line above and below the company name. While the blank lines look good in that particular instance, there may be times when you don't want them. For instance, if you want more lines of text in the letterhead, any extra blanks may use too much space, making the letterhead too "tall."

To eliminate blank lines, we need to understand what causes them. That's easy: When *Write ROM* sees a carriage

```
.ol 5 [1/2 normal marg for expanded]
.or 38 [1/2 normal marg for expanded]
e^[W1
.oc on [centering on]
WIDE LOAD INC.
^[W0
.ol 10 [back to default marg]
.or 75 [back to default marg]
20 Point Lane
Boldface, IA 12345
(999)999-9999e
%w %d
.oc off [centering off]
```

Figure 1. Add remarks to dot commands to help you remember your intentions.

return—anywhere but in a dot command—it starts a new line! (A carriage return appears on your screen as the produced when you press ENTER.)

Looking again at Figure 1, examine the third through sixth lines. In line 3, because *e* and *^W1* are printer commands, they produce no printed output, leaving only the carriage return (*^*), which homes the print head and moves the page up one line. Effect: It prints a blank line.

Line 4, being a dot command, is neither displayed on-screen nor printed—it's effectively invisible.

Line 5 displays and prints the company name, and its carriage return advances the paper.

And finally, the printer command *^W0* in line 6 is not printed, but its carriage return

```
.ol 10
.or 75
.oc on
e^[W1WIDE LOAD INC.
20 Point Lane
Boldface, IA 12345
(999)999-9999e
%w %d
.oc off
^^[W0

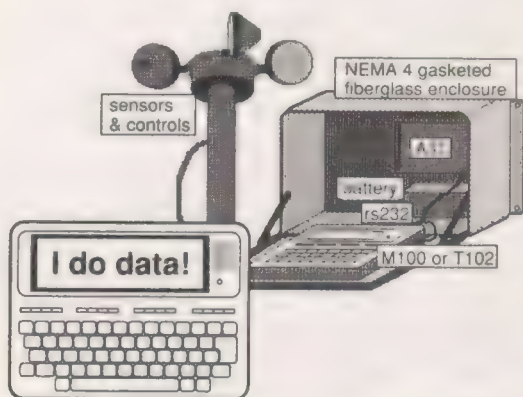
WAY2.DO
Page 1

Write ROM
@PCSG 1985
```

Figure 2. Put printer commands in lines of printable text to eliminate blank lines.

The Owl, On-site Weather Logger.

You already know about the screen, the keyboard, the ports, the programmability, the economy and all the other great features of the M100/T102 computer. To us what that makes is a great platform for an intelligent data logger! We've thought so ever since 1984, when we made our first logger for use in apple orchards as part of a research project at the University of California, Berkeley. Today, EME Systems continues to provide model T hardware add-ons, software and consulting solutions for tough data logging problems in the laboratory, in industry, and especially in the great out of doors.



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WIDE LOAD INC.

20 Point Lane
Boldface, IA 12345
(999)999-9999

Thu Dec 19, 1991

Figure 3. This is the letterhead produced by the file in Figure 2.

again advances the page. The net result of those four lines looks like this:

[blank line]
WIDE LOAD INC.
[blank line]

The key to eliminating blank lines, then, is not to put printer commands on lines by themselves, but rather to include them in lines of printable text.

SHOOTING BLANKS

Figure 2 prints the same letterhead as Figure 1, but without blank lines above and below the company name (see Figure 3). The printer commands, no longer on their own lines, now surround the company name on the same line. Voila—no more blank lines!

It could get a bit weird, though, if we let it. Unlike Figure 1, the printer commands in Figure 2 now follow the .oc on dot command. Since they're not invisible

to Write ROM's centering calculations, they're treated as actual characters to be centered along with the company name. We can no longer simply halve the margins as in Figure 1.

For example, since Write ROM now sees this . . .

ë^[W1WIDE LOAD INC.^[W0

as a single line of text to center, it would first send the printer some

spaces for the left margin, then whatever printer codes you've defined via PRINT Code Emph for emphasized type (ð), then ESC W 1 to shift the printer into double-wide mode, then the company name, and finally, ESC W 0 to cancel double-wide.

Whoa! Where are your margins now, pal? Let's see, normal spaces for margin, then some number of printer codes, then some number of double-wide characters (Write ROM hasn't got a clue that they're double-wide!), then more printer codes. . . The arithmetic gets kinda sticky, doesn't it?

So who needs sticky math? Phooey! Let's just fool Write ROM instead! Here's how . . .

Leave your margins at their normal settings (10 and 75 in this example). Now start adding spaces between the end of the actual text (INC.)

and the last printer command (^[W0). This makes the line look wider to Write ROM. To keep it centered between the margins, Write ROM starts pushing the first part of the line farther and farther toward the left edge of the page or screen. At some point, the line will be properly centered on the printout.

It's the double-wide that makes centering so potentially messy. This method keeps all the double-wide-ness between the left and right margins, and Write

```
.ol 104
.or 754
.oc on4
ë^[W1WIDE LOAD INC.          ^R4
20 Point Lane4
Boldface, IA 123454
(999)999-9999ë4
4
%w %d4
4
.oc off4
4

WAY3.DO
Page 1

Write ROM
BPCSG 1985
```

Figure 4. Some printers can use this alternate method to produce the letterhead in Figure 3.

SUPER HERO

ROM just counts characters as usual. With a only a little experimentation, you'll arrive at a properly centered result. And you don't have to calculate anything! A good starting estimate, however, is to add a number of spaces equal to roughly half of the actual original text. As shown in Figure 2, the 14 spaces of *WIDE LOAD INC.* needed seven spaces of text to properly center.

In addition to `^[W1` and `^[W0`, some printers can use `^N` and `^R` to control double-wide. Using those, as shown in Figure 4, produced the same printout and required six added spaces for proper centering.

So play around a bit, and you'll soon find yourself easily producing classier letterheads. We'll get even fancier next time. But first ...

And you don't have to calculate!

A COMMENT ON COMMENTS

Though I didn't mention it at the beginning of this column, but the *Write ROM* manual does mention one way to add a comment to your file: Simply put the comment on its own line, and precede it with a dot (period).

For example, Figure 5 is simply Figure 4, to which I've added seven comment lines. The first comment is a blank, just a dot followed by a carriage return (produced by pressing *ENTER*). Then come five lines of comment text, and finally, another blank comment line.

Like remarks appended to legitimate dot commands, these comments don't appear on the *Map* or in printouts. However, they're not quite so invisible. When *Write ROM* encounters one of these "mutant dot commands" during mapping or printing, it beeps, displays *Bad Command in file*, and waits for you to press a key. Thus, in mapping or printing the file in Figure 5, you must endure seven beeps and keypresses to get past the comments.

The first map in Figure 5 shows the *Map* screen when *Write ROM* encounters the first comment. The second *Map* screen shows the screen after all the comments have been encountered. Note that the *Bad Command in file* message remains on the screen even after all the comments have been passed.

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MARCH 30th, 1992

Secrets Of Rom Revealed

This concise, easy to understand manual covers everything you need to know to call standard Model 100/102 ROM routines from an Option ROM (listings included), how to call the text editor from .CO and Option ROM programs, the source code for a complete option ROM program that does a search and replace on test files, and information on Model 200 & NEC 8201 ROMS. Diskette included, \$25.00 + shipping

King Computer Services, Inc.

10350 Samoa Avenue, Tujunga, CA 91042 (818) 951-5240, (818) 353-1278

Circle 116 on reader service card.

In exchange for a little hassle when mapping and printing, you can include some very detailed comments this way. I've found one restriction: The length of a comment line must not exceed the right margin you've set. Otherwise, *Write ROM* wraps the line, and part of it will be mistaken for actual text to be printed. To see what I mean, try making a too-long comment line, and see what happens on the *Map* or printout.

EXIT LINE

That's all the space I have for this month, but it was enough. Gary's gonna be so happy when he wakes up someday to find we've got his letterhead all ready to go!

Meantime, you're becoming a pro, and we've kept the math to a minimum ... so far.

See you next month!

```
.ol 10
.or 75
.oc on
^NWIDE LOAD INC.      ^R
20 Point Lane
.
.You can embed hidden comments. They
.won't print or show on the Map but
.will cause a beep and error message.
.When that happens, just press ENTER
.to continue.
.
Boldface, IA 12345
(999)999-9999
.
%w %d
.
.oc off
+

COMMNT.DO
Page 1

Write ROM
Bad Command in file

COMMNT.DO
Page 1

Write ROM
Bad Command in file
```

Figure 5. "Mutant dot commands" can act as detailed comments in your file.

Changes your Model 100 into a totally different computer with capability you never thought possible.

LucidTM
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Another fine product from the innovative people at PCSG!

Infoworld
rated Lucid's
performance
"excellent"

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LUCID[®] is here now. It is on a ROM cartridge that snaps into the compartment on the back of your Model 100. It takes no memory to load and no memory for operating overhead. That means you have the full 29.6k bytes free to store your data.

First, LUCID[®] is memory conserving. It will let you build a large spreadsheet—255 row by 126 column capacity. You build huge spreadsheets in your Model 100's RAM that could consume 80 to 100K on a desktop computer.

Secondly, LUCID[®] is fast. LUCID[®] is so rapid, a 36 column corporate financial statement took less than 4 seconds to calculate.

Thirdly, LUCID[®] has features you won't find in most other spreadsheets. For example, when you type a label (text) it will cross column boundaries; in other words when you type a label or title it will appear as you type it irrespective of column or width. LUCID[®] also allows you to set column widths individually, and of course LUCID[®] has insert row and insert columns, as well as other standard features. LUCID[®] even lets your formulas refer to cells in other spreadsheet files.

Further, LUCID[®] has what no other spreadsheet has: Cut, Copy, and Paste. It uses the same keys as Cut and Paste in TEXT, but here's the difference: it takes all the formulas with it when you paste and they all automatically recalculate with the entire sheet.

And here is what is really amazing. You can copy or cut from one spreadsheet and paste into another spreadsheet or even a TEXT file.

LUCID[®] supports all BASIC math functions as well as Log, sine, cosine, tangent, exponentiation and other sophisticated math functions.

LUCID[®] has so many features that you will say "this is what I need in a spreadsheet", such as automatic prompting of an incorrectly typed-in formula showing just where the mistake was made.

LUCID[®] has expanded "go to" functions that remember and produce a windowing capability.

But perhaps most remarkable is that LUCID[®] is not only a spreadsheet but a program generator as well. First, LUCID[®] lets you protect all cells against entry or change, and then unprotect just the cells you want for someone else to use as input fields.

LUCID[®] will not only process values, but text input as well so that the facts other than numbers can be responded to. LUCID[®] has the ability for you to refer in a formula to cells containing words. This feature combines with the capacity of doing "if then" statements that work by doing table look-ups against even massive X/Y charts of text or numerical information. You can produce a program that responds to inputs with no programming knowledge whatsoever.

You can prepare a report section in your spreadsheet with instructions to your user for printout, and they can produce a personalized printout that responds to their input. All your formulas and tables that did the calculations and provided the facts are invisible to that user. LUCID[®] is useful for doctors for patient questionnaires, troubleshooting technicians, purchase clerks, people doing job quotes, stores for customer workups, insurance agents and anybody who needs to process specific facts and numbers to produce a report based on those responses.

LUCID[®] comes with a manual that explains not only the characteristics of LUCID[®], but will train you how to use a spreadsheet even if you have never seen one before. You are shown how to do budgets, forecasts, breakeven analysis amortizations and many other types of personal and business reports and calculations.

User friendly is such an over-used term in this industry, but a typical comment has been "I have never seen a spreadsheet that does so much, and yet LUCID[®] is so much

easier and faster to use."

LUCID[®] is a result of a most exhaustive developmental effort in which PCSG's objective was to develop a spreadsheet that was better than the state-of-the-art. We are so pleased because LUCID[®] provides for the Model 100 spreadsheet capability you cannot equal on a desktop computer.

LUCID[®] is, in our opinion and that of those who have examined it, a breakthrough. We sell it on a 30 day trial. If you are not completely satisfied, return it within 30 days for a full refund. Priced at \$99.95 on snap-in ROM. Please add \$5.00 for shipping and handling. Mastercard, Visa, American Express or C.O.D.

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WRITE ROM is the definitive word processing extension for the Model 100. PCSC produced the first text formatter for the Model 100, now sold by Radio Shack as Scripsit 100. Now, 18 months later, PCSC introduced WRITE ROM. Those who have experienced it say WRITE ROM literally doubles the power of the Model 100.

WRITE ROM — as its name implies — is on a snap-in ROM. You simply open the little compartment on the back of the Model 100 with a quarter and press WRITE ROM in. It's as easy as an Atari game cartridge. You can use other ROM programs like Lucid whenever you wish.

WRITE ROM lets you do every formatting function you'd expect, like setting margins, centering, right justifying and creating headers and footers. But it does them under function key control.

WRITE ROM remembers your favorite format settings so you can print a document without any setup, but you can change any formatting or printing parameter instantly with a function key.

WRITE ROM's "pixel mapping" feature shows you an instant picture on the screen of how your printout will look on paper.

In all there are 64 separate features and functions you can do with WRITE ROM, and some of these features are truly breakthroughs for the Model 100.

First, WRITE ROM lets you do search and replace. Any word or phrase in a document can be searched for and replaced with any other phrase where the search words appear.

Second, WRITE ROM lets you send any text (formatted or not) to any other computer over the phone with just a function key. What's more, it dials and handles sign-on and sign-off protocol automatically.

Third, WRITE ROM has a wonderful feature called Library that lets you record favorite phrases, words or commonly used expressions (often called boilerplate).

Any place you wish Library text to appear you just type a code. WRITE ROM automatically inserts the text just like a Xerox Memory Writer. Picture what you can do with that kind of capability.

WRITE ROM is blindingly fast. No one can claim faster operation. Because it is on ROM it uses virtually none of your precious RAM. It works with any printer, serial or parallel. You can make a duplicate copy of a document file under a new filename. Rename or delete (kill) any RAM file with function key ease.

This description only scratches the surface of this amazingly powerful piece of software. Dot commands allow control of such things as margins, centering, line spacing and other changes in the middle of a document. Most are WordStar[™] compatible.

A mailmerge feature allows you to send the same document to every name on your mailing list, personalized for each recipient.

WRITE ROM enables you to do underlining, boldface and correspondence mode as well as any other font feature like superscripts that your printer supports, in a way that many users say "is worth the price of the program."

To underline you don't have to remember a complicated printer code. You just type CODE u, and to stop underline, CODE u again. The CODE key is to the right of your spacebar. Boldface? CODE b to start and stop. Easy to remember and do. Five different printer features of your choice.

We couldn't list all the features here. For example, you can select not just double space but triple or any other. You can use your TAB

key in a document. WRITE ROM allows you to indent. This means you can have paragraphs with a first line projecting to the left of the rest of the paragraph. WRITE ROM has a feature unique for any word processor on any computer. It's called FORM. FORM is an interactive mechanism that lets you create screen prompts so that you or someone else can answer them to fill out forms or questionnaires.

With FORM, any place that you had previously typed a GRAPH T and a prompt in a document, WRITE ROM will stop and show you that prompt on the screen. You can type in directly on the screen and when you press F8 you see the next prompt. It goes to a printer or a RAM file.

Think how you can use FORM. A doctor or nurse could use it for a patient's history with each question appearing on the screen. An insurance salesman could use it for his entire questionnaire. You could construct a series of prompts to answer correspondence, typing the answers, even using Library codes. This feature lets you answer letters in rapid-fire fashion, each with personalized or standard responses.

Before WRITE ROM you had to be a programmer to create a series of prompts. Now it's as simple as GRAPH T.

PCSC makes the claim that WRITE ROM is the easiest, fastest and most feature-rich formatter for the Model 100. We're happy to offer WRITE ROM because it expands the 100 to a dimension of text processing you cannot equal on even larger computers.

We brashly state that WRITE ROM is the best you can buy. But put that to the test. If you aren't as excited as we are, return it for a full refund. Priced at \$99.95 on snap-in ROM. Mastercard, Visa, American Express and COD. Please add \$5.00 shipping and handling charge.

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Another fine product from the innovative people at PCSG!

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COMPATIBILITY: WP-2.

PHONE HOME: The WP-2 Phone Book

Let your WP-2 do the dialing—without leaving your application!

by Stan Wong

Phone home.
Phone home.

- E.T.

- Mom

The WP-2 excels as word processor. I bought the WP-2 to help me with my word processing tasks and it's served me very well. Last month I looked at the WP-2 Calendar function. This month I'll explore the WP-2 Phone module.

Now I have no excuse for not "phoning home." My two moms, Ma Wong and Ma Bell, both love me for calling. And I can do so at the press of a button. Of course, I can do the same with the speed dialing buttons on my phone (so who needs the WP-2?), but, hey, I've got to have *something* to write about!

HORSE OF A DIFFERENT COLOR

Phone lets you create, sort, update, and store one or more lists of phone numbers. It'll dial your phone for you, too. The Phone module is a strange animal.

There's a saying that goes something like this: You can lead a horse to water, but if you can get him to float on his back, you've got something. Phone appears to be modeled after similar PC functions. But since the WP-2 is intended as a mobile writing tool, tying it to a stationary object like a phone seems to be an odd notion.

The Phone module is implemented very much like the Calendar function. It would be useful to reread last month's discussion of the Calendar module.

As with the Calendar function, the Phone Book is conceptually similar to MS-DOS TSR's (terminate-and-stay-resident programs). For those of you unfamiliar with DOS, TSR's are programs which you can *pop up* in the

CompuServe 300	:	(714)851-0145	:	300 baud access
MicroMime	:	(714)545-1765	:	WP-2 Memory
Portable 100 Magazine	:	(603)924-9455	:	Kepner, Nugent

Figure 1. Special numbers in Stan's phone book.

middle of another program. When you exit the TSR, you are returned to the point where you interrupted your application.

How you access the Phone module determines what functions you'll be allowed to perform. You can pop up your phone directory from within a document or access it as a regular file from the FILES menu.

WHO YA GONNA CALL ... ?

The Phone module is designed to autodial phone numbers through a

autodial capability through a modem.

The advantage of using Phone over storing numbers in a text file is that you can access the numbers without having to leave the current document that you are working on.

CREATING THE PHONE BOOK

Creating your phone book is easy. It's pretty much like setting up your calendar. Enter the Phone module by pressing F2-8. You'll see the following heading line:

NAME : PHONE NUMBER : MISCELLANEOUS INFORMATION

along with the name of the phone book MYPHO.DO in the lower right corner of the screen. Press any key to clear the heading and make entries like the ones in figure 1.

I use tabs to line up the first set of colons and spaces as the alignment character for the rest of each entry.

The second two entries are typical of people or companies that I might call. The first is the number of the CompuServe Information Service. While I don't use it to make voice calls, I use it as reference for the Telcom function. I'll explain more later on.

TELCOM SETUP

After you create your phone book (MYPHO.DO), you need to complete the setup by telling the WP-2 about your modem. You do this through the Telcom Setup (F2-I-I, F2-T). If you've been following this column you've already been through this part in the Telcom series. If

**It'll dial your
phone for you, too.**

modem. The WP-2 uses the modem to generate the touchtone beeps and boops that represent a phone number. PC programs that autodial work in the same way.

With the WP-2 it's not as convenient since the modem is not built in. If you don't use the WP-2 Telcom module, buying a modem just to dial the phone doesn't make much sense. There are situations, though, where it might be worth having.

The Phone module can also be used as an easy access lookup phone directory if you don't, or can't, take advantage of the

so, you can skip this section.

If you have a Hayes-compatible modem, set the following parameters to the values given below. Since 99.44 percent of 2400-baud modems sold to consumers these days are Hayes compatible, don't worry if you don't know.

Initialize modem	AT	
Dial sequence	ATDT	
Terminated code	OD	
Prefix		
Area code		714

If you are one of the few people left in this country stuck with pulse dialing service, use *ATDP* in the second item. If you are dialing from work or need to use a special access code, put it in the *Prefix* parameter (usually a 9).

And of course put your own area code in place of mine. The Phone Book additionally checks the area code set in the *Telcom* section and won't dial it if the two are the same.

Note that the *Terminated code* is "zero-D" rather than "oh-D."

MODEM SETUP

I'll assume that you know how to set up your modem with the WP-2. I covered the subject in the *Telcom* series a few months ago.

The WP-2 Phone Book is only of use if you have a modem hooked to the serial port. Ideally the modem should have two RJ-11 jacks. One to plug the modem into the phone line and another to connect your telephone set. Many of the smaller pocket modems have only one jack (which presumably would go to the phone line), so you'll need a *duplex adapter plug* to connect your telephone set.

In *Telcom* you have an autologin sequence for only one computer telephone number. The Phone Book is a convenient place to park numbers and logon sequences of computer services that aren't your primary service.

POP GOES THE PHONE BOOK

You can invoke the Phone module while you are editing a document. For instance, let's say that you are working on an article for *Portable 100* magazine. You suddenly need a piece of information from our intrepid editor Michael Nugent. A quick F2-8 keypress gets you into your phone book. You press F1-2 to find the string *Nuge*, press *ENTER*, and the WP-2 dials the phone! *Nuge* answers, gives you the information you need, and you can go back to editing your article without leaving it and losing your place. Not bad for a word processor!

Of course the big if in this scenario is if you had a modem already hooked up you could pull this off with ease.

But the attraction of the WP-2 is it's go-anywhere, use-anywhere, use-anytime utility, which would argue against being tied down by an extra piece of hardware like a modem.

I do find myself using my WP-2 even when at my work or home desk. And I do have a spare external modem sitting around doing nothing. When I sit down at my desk to do some work, I can simply plug the modem into the serial port just in case, taking only a couple of extra seconds.

Frankly, for the way I work, having the sudden need to make a phone call while I'm working with the WP-2 is a rare occurrence.

FIRST THINGS FIRST

A phone book is good only if you can find the number that you need. Phone books are typically sorted by name. You

Print your phone book and put it in your planner book.

can use the Find function to get the entry that you need, but if you are using the Phone Book for reference rather than autodialing, alphabetizing could slow your Find function search down.

The Phone Sort function works only with phone books stored in the file named *MYPHO.DO*. (This implies that you can keep more than one phone book. You might keep one for business numbers and a second one for personal contacts.)

To sort your Phone entries you have to be in the Phone mode (F2-8, remember?). Pressing the *SORT* key (F2-3) sorts the entire list.

You can sort a part of your phone book by selecting the portion that you want to sort before pressing the *SORT* key. This implies that the entries that you want to sort are contiguous. This can be useful if you store your work and personal phone books in one file but want to keep the entries in two separate sections.

PHONE FROM FILES

I mentioned earlier that you can access your phone book from within a document or from the *FILES* menu. You can do two tasks from the *FILES* menu. The simplest is to put the cursor over *MYPHO.DO* and press *ENTER*. You'll now be editing your phone book as if it were an ordinary file. You can edit the contents, scroll through it, and do any editing you want.

You can also check your phone book at the *FILES* menu by using the *VIEW* function. Highlight the *MYPHO.DO* entry and press F1-V instead of *ENTER*. You should see the first seven lines of your phone book. A —More— indicator in reverse video at the bottom tells you that there's more to look at. Press *ENTER* to see the next seven lines.

Unfortunately this is a one-way viewer. You can scroll forward through your phone numbers but not backward. That's good reason to keep your phone book sorted. At the end of the list you'll be deposited back at the *FILES* menu. Or press *ESC* to quit before you've reached the end of your phone book.

I find it more convenient, at the *FILES* menu, to press *ENTER* rather than F1-V. This puts me in the normal text editing mode. This way, I can use the normal cursor control functions to scroll forward as well as backward through my entries.

TIPS

I can't take my WP-2 everywhere I go, so I carry one of those fat, schedule/diary planners. Print your phone book and put it in your planner book. Mark up the paper copy to make changes, additions, or deletion. Periodically, update the WP-2 phone book and print a fresh copy for your planner.

You can also use the WP-2 to keep a contact log. Create a document to use as your contact log. Pop up the phone book. Use the WP-2 to dial the phone. Then pop back into the contact log to make notes during the conversation.

This is your column. I want you to help define the "yellow brick road" for me to follow. Fire up your WP-2 and send me a letter in care of Portable 100 or directly at P.O. Box 28181, Santa Ana, CA 92799-8181. If you prefer the electronic medium, use GEnie address STAN.WONG, Compu-Serve address 70346,1267, or Internet address dasun!wongs@SunKist.West.Sun.Com.



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FAST (tm) 3x turbo cassette LOAD/SAVE utility for Tandy M100/102, M200 (specify). See 11/89 P100 review. SASE for information. Cassette, manual \$19.95 ppd. Zwillenberg, 475 Richmond, Maplewood, NJ 07040

HARDWARE

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Model 100 32K, Multiplan ROM, DVI/Modem, Cable, Recorder, Software, book, \$450.00; C. Itoh printer \$150.00. (812)853-3297.

Tandy 102 32K, Portable Disk Drive & portable Brother printer \$350.00; Tandy 1100FD 640K and modem \$450.00. (213)828-1997.

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EMM, integrated ExtRAM/RAM/PDD-1&2 file manager. Runs in ExtRAM, utilizing unoccupied space for file storage. Features aggregate file selection and file compression. Send SASE for information or \$15.00 for disk. TPSIG, P.O. Box 684473, Austin TX 78768-4473.

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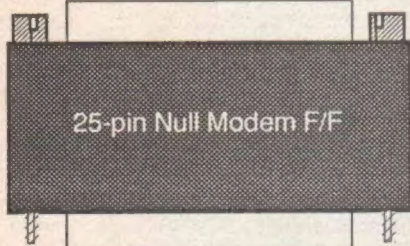
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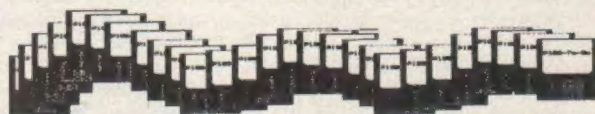
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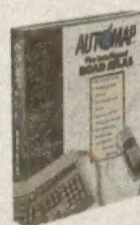
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